DIGITAL VIDEO RECORDER

PC BASED DVR

DVR

(Digital Video Recorder)

Integration User Manual

MPEG4 Algorithm

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1. About Capture Card

- **1~16 Camera Input**

  Up to 16 camera input available for digital storage.

- **1~16 Sensor Input**

  Up to 16 sensors linked to the system.

- **1~4 Digital Output (Relay Outputs)**

  Digital Output can be used to activate things like siren… etc. and linked to sensor detection.

- **Sound Recording and Two Way Communication**

  Sound can be recorded with video images, and mutual communication between DVR and DVR_NET.

- **Multi-Monitoring**

  The Multi viewing is selectable by one of 1, 4, 6, 9, 10, 16 camera video on monitor, enlarging screen feature available.

- **PAN/TILT/ZOOM/FOCUS**

  Support PTZ camera control by the DVR program

- **Auto Rebooting System – Watchdog**

  When DVR detects a system error, it reboots automatically.

- **Motion Detection and Sensor Triggering**

  Record images only by motion detection or sensor triggering.

- **Scheduled recording**

  You can schedule the program to work only whatever you want, recording data only on specific periods and days of the week.

- **Data Backup and Auto Backup**

  Data can be recorded onto different media (like DAT, CD, or DVD), and you can specify the camera to record, and the same for date and time. And scheduled recording means you can automate the whole Backup process.

Digitalized Video Search

Recorded data can be reviewed in digital, each camera or all at a time, and you can specify the date and time period of the search. You can also extract an image from the video to save separately and print it out, enlarge and edit it.

Network Support (TCP/IP Protocol)

By network support, you can log on to DVR from any remote site to search through and download video data, and even change the settings of the program.

Support POS SYSTEM

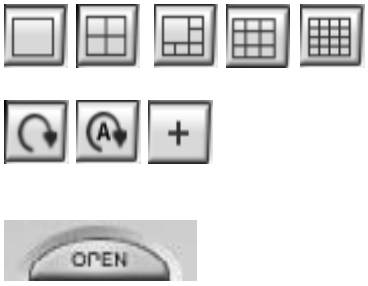
Record data from external devices (POS, Access Control, ATM, etc) with DVR video images. Text Search allows to search data from external devices with DVR video image when event occur. This will raise the level of integrity and security.

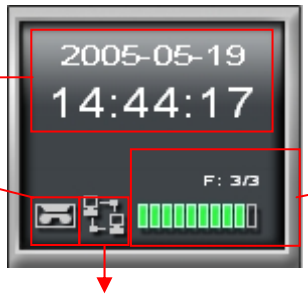
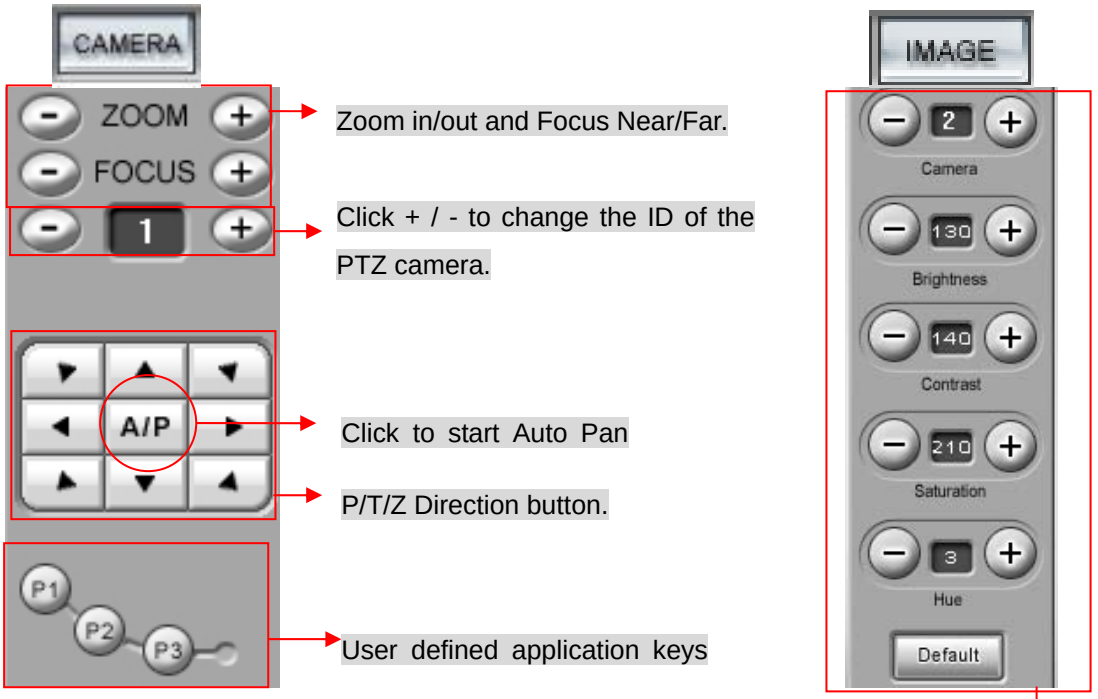
Specifications

Feature	Specification
	LIVE DISPLAY
Camera Input	1~16 Port (NTSC/PAL)
Sound Input	1, 2, 4, 16 Port
Sensor Input	1~16 Port
Relay Output	1~4 Port
TV Output	1 port
Compression	MPEG-4
Recording Mode	Watch, Normal, Motion Detection, Sensor, Scheduled Recording
Remote Control	Full remote control PSTN, ISDN,ADSL, LAN and TCP/IP
Back-up	DAT, CD, DVD
PAN/TILT/ZOOM/FOCUS	RS-232/422/485 Interface

- Main Board to be recommended strongly to use 865 PE Intel chip or above. The compatible exact Model Name shall be inquired to Vendor.
- Suggest use ASUS or GAGYBYTE motherboard
- CPU that is lower than Intel Pentium-4 2.4 GHz could reduce the recording frame rate. (Recommend 3GHz CPU)
- More than 256MB of memory, recommend 512 MB.
- Compatible platform: Windows 2000, XP.
- I) Turn off System Standby mode.
  II) Turn off Screen saver.
  III) Turn off all the energy saving feature.
- System standby mode, monitor energy saving mode, and hard disk energy saving mode must be "Disable".
- Version No. of Driver and operating software must be noted separately for future up-grade service.
- VGA card to be recommended latest version of ATI to be competent to the overlay image format.
- Install Direct X 8.0 or higher.

2. Main

A		Screen Division button for 1,4,6,9,16 Next Page / Auto Next Page/ Lager Screen / Open PTZ&Image control panel.
B		Press “Emergency Record ” to force the continuous recording of ALL CHANNELS MANUALLY, press again will GO back to previous setting
C		Click the number button to turn on and off the corresponding relay.

D		Click the button to enter another DVR program.
E		Click Log In and enter the ID and password to login. Click Log Out to logout.
F		Exit
G	2. The current date and time 1. Lit up during Backup  3. The used volumes / the total available volumes 4.Blinking while connected	
H	 Zoom in/out and Focus Near/Far. Click + / - to change the ID of the PTZ camera. Click to start Auto Pan P/T/Z Direction button. User defined application keys Image Control panel	

<table>
<tr><td>I</td><td colspan="2">

1. The top row: A blinking light indicates that the camera is enabled, but no video received.

The bottom row: The box is lit up during recording, and the color of the light indicates the recording mode.</td></tr>
<tr><td>J</td><td>
</td><td>Preset points, Preset function .

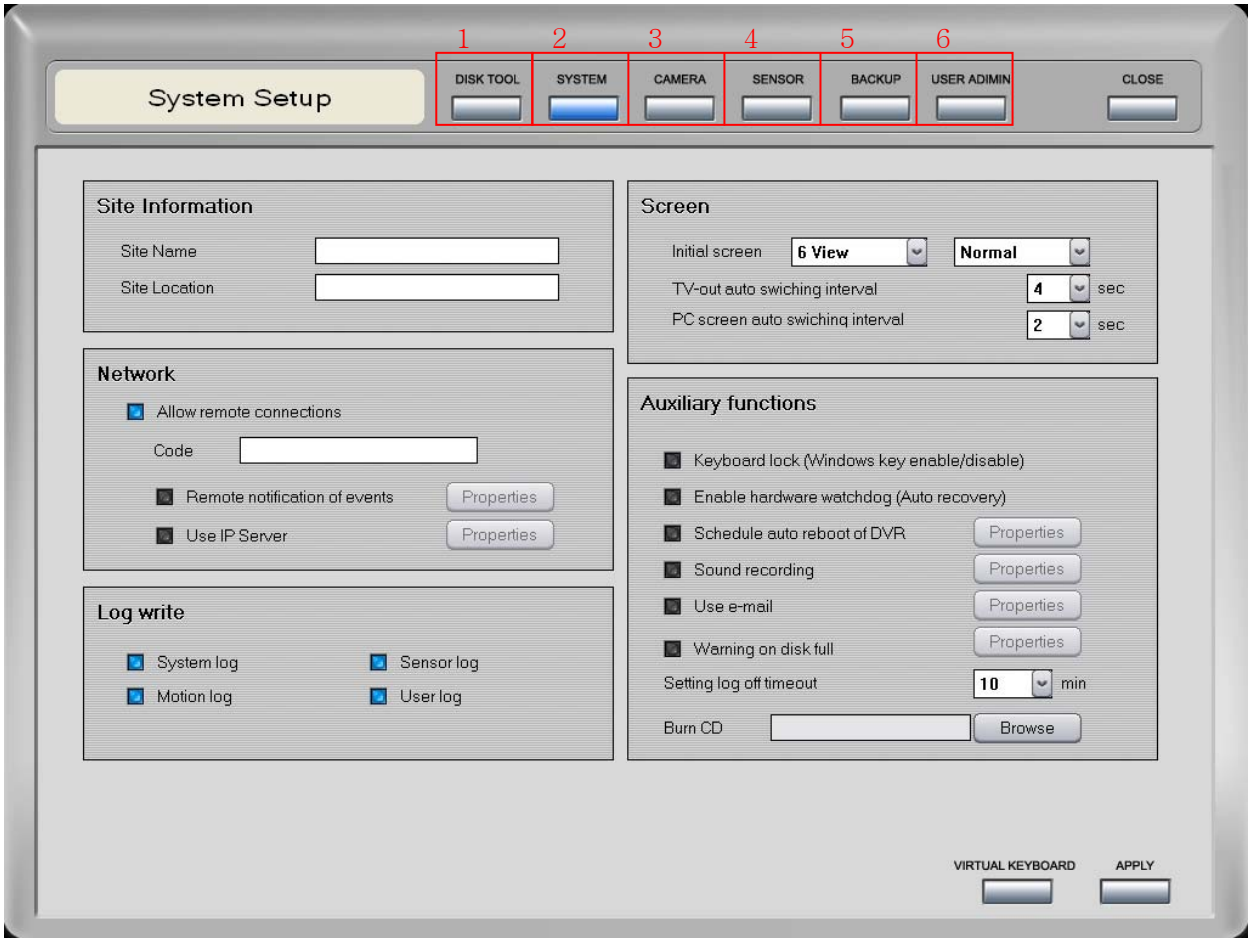
NOTE: All the PTZ function mentioned above depends on if the <u>PTZ PROTOCOL</u> itself provides such capability.</td></tr>
<tr><td>K</td><td> </td><td>Click the button and select channel,the sound will be Broadcasted form the choosing camera</td></tr>
</table>

※On the 6 and 10 division image screen, if you want to have a larger image, click the right button of mouse, located on that image screen. Then, that image moves to large image location.

※You can use F5, F6 as hot key for larger screen. F5 leads the enlarge screen but press F6 next to F5, leads more larger screen.

3. Setup

Start "DVR Setting", take note of the following appearance.

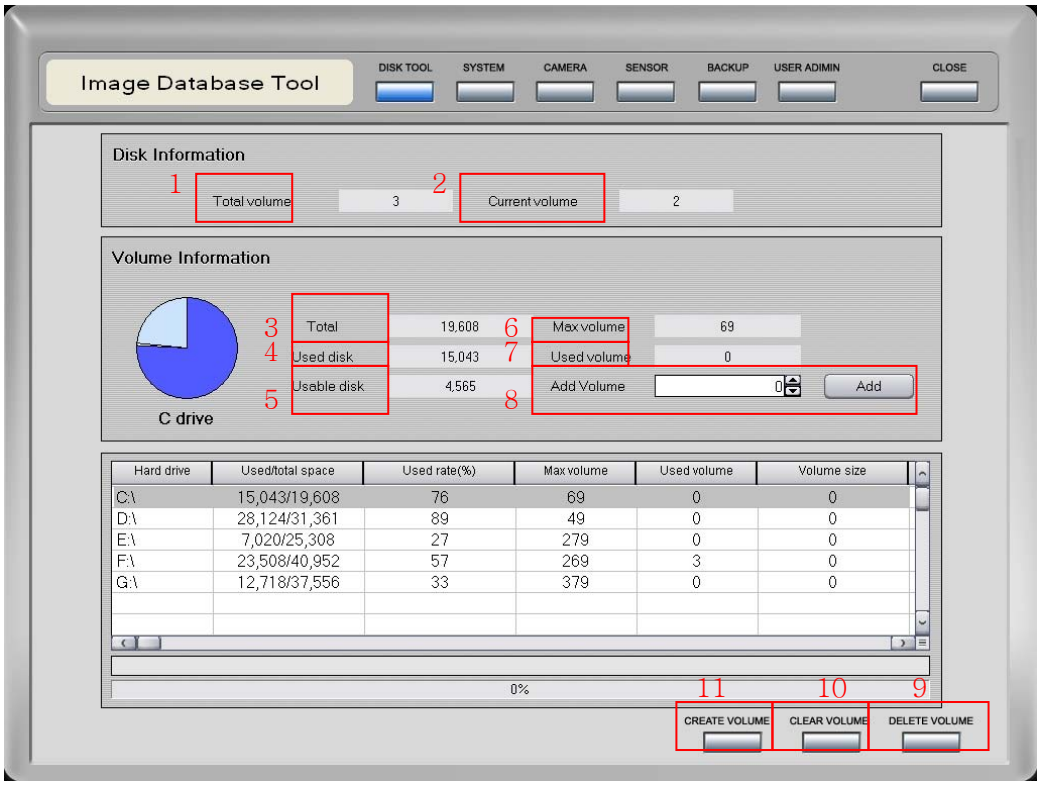


1. **Disk tool** - Create a file system. (Program will create its own file system, so that the large amounts of data can be handled safely and it reduces the danger of system failure.)
2. **System** - Settings for network connection options, initial screen, sounds, automatic restoration, etc.
3. **Camera** - Set up of the cameras and the digital outputs and schedule recording etc.
4. **Sensor**- Settings for max.16 sensors.
5. **Backup**- Settings for automatic backup schedule.
6. **User Admin** - Different users are assigned to different access on DVR.

Note:

Even when you are doing some thing in Setting mode, DVR Main program still is working. However, Prior to adjusting this "Disk Tool" only, you must stop Main Program because DVR main Program may be in Recording status.

3-1. Disk Tool



1. Total Volume- The total number of all hard disk volumes

2. Current Volume –The used volumes

3. Total - The total capacity of hard disk.

4. Used Disk - Hard disk being used currently.

5. Usable Disk - The capacity of hard disk available.

6. Max Volume - The total number of Volumes available.

7. Used Volume - The number of Volumes being used.

8. Add Volume - Input the number of needed volumes.

9. Delete Volume- Discard all volumes from the selected hard drive.

10. Clear Volume – Clear all image data

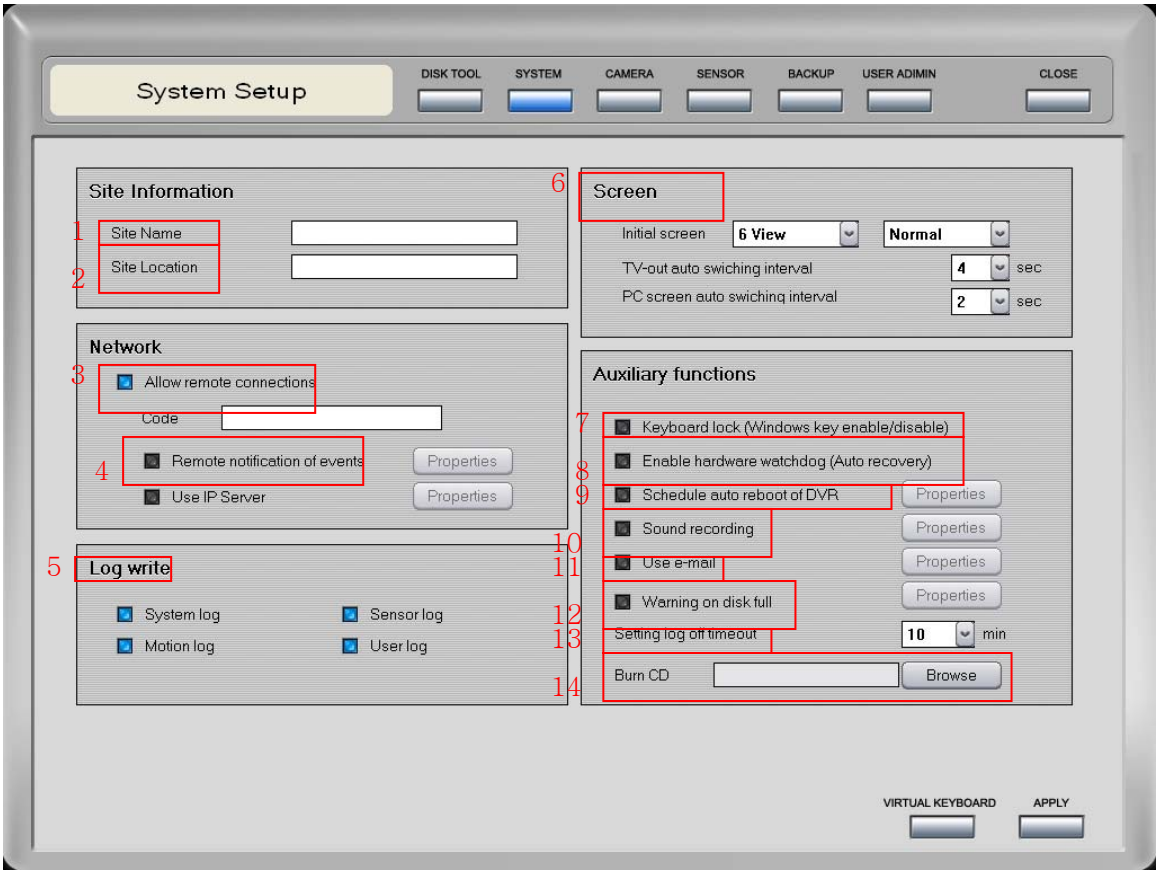
11. Create Volume – Add Volume..

Enter the number of needed volumes on "Add Volume" and click "Add" button, check the correct number appearing on "Add Volume" on the graph below, and click "Create Volume" button to create a file system on the selected Hard Disk.

What is a Volume?

One (1) Volume equals to 65MBs of hard disk space. Motion Picture Data are recorded in these volumes, and once a volume is completely full the program starts overwriting from the beginning of the volume. (Important data better be backed up prior to this overwriting process.)

3-2 System Setup



1. Site name: Key in name of the system, (This name for sending e-mail).

2. Site location: Name of the location at which the DVR computer is located.

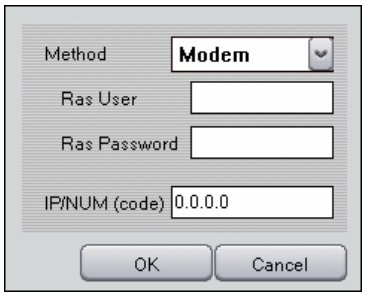
3. Allow remote connections: Check on the box to allow connection from remote site.

Code: Give a unique combination of case-sensitive alphanumeric and numeric character. (max. 10 characters)

4. Remote notification of events

- Option of sending notification to where, in case of movement detection or sensor trigger. Check if it allows notifying over network PC, where are known with IP address or the number (Code) and installed with network program. The remote client is notified through sound and will popup (if running and minimized)

Method :.



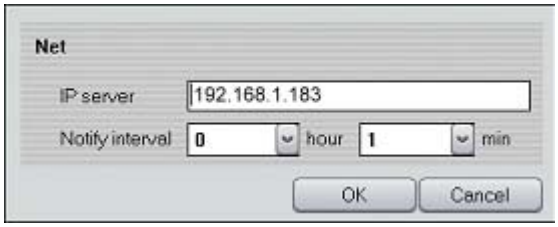
In case of Modem, Ras user must be configured.

(Notice – If DVR server is running on Windows 2000/XP “Incoming connection” must be created in “Network connection”. And make password(Ras user and password)

- Use IP Server

: If IP server is utilized, it will be much convenient in access to network without input frequently the changed dynamic IP. This can be achieved by assigning the unique Code to the DVR and by configuring that code number to DVR.

The default update time is one hour.



IP Server: Specially developed Program to control Dynamic IP.

Notify interval: select IP address update time.

NOTE : 1. Code number shall be made with numeric and alphabetic within 10 digits, discerning capital letter and small letter.

2. Users have to register the site name (code) before connecting to our IP server (check **chapter 16**)

5. Log Write

: Record a Log file(Log can be viewed with Log Viewer in Utility.)

- **System log** : Time information of Main, Search, Setting start /end .
- **Sensor log** : Log for sensor detection.
- **Motion log** : Log for motion detection.
- **User log** : Log information of User login.

6. Screen

: Initial setting for main program.

- **Initial screen** : Number of camera shots that will be displayed when system is started.
- **Normal**, **Large, Full** : Size of the camera shots displayed when system is started.
- **CCTV auto switching interval**: The amount of time each camera shot will be displayed intermittently through the Composite-Out port.
  -- Normal : Displays the current camera shots of the monitor.
  -- 1 View : Sequential switching of each camera .
  -- 4 View : Sequential switching of 4 cameras.

- PC Screen auto switching interval: It sets the time between one screen division shot and the next, only when the auto switching button function is activated

7. Keyboard lock (Windows key disable / enable): Disables Windows Button from the keyboard.

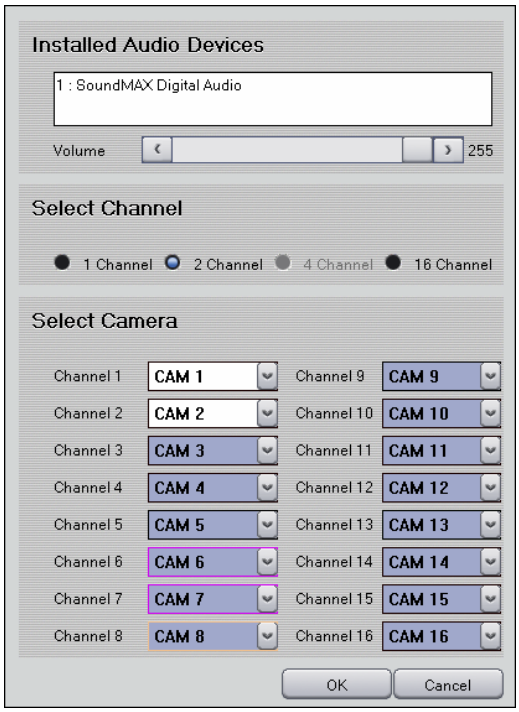
8. Enable hardware watchdog (Auto Reboot): Allows rebooting when system problems are detected.

Note: For this, make sure “DVR Main.exe” to be set at “Startup“ of “Program” in Windows.

9. Schedule auto reboot of DVR : You can set the weekday and time, as you want, so that DVR system can be rebooted automatically regardless of watch dog functions

10. Sound Recording

This option allows camera images to be recorded with sound.



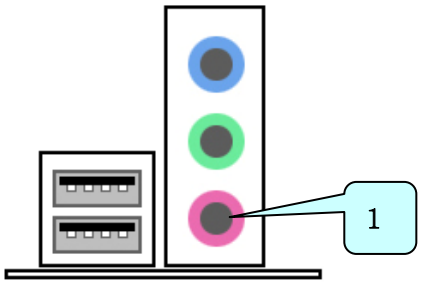
- **Installed Audio Devices :** If there is 1 sound device, up to 2 channels of sound recording is possible. If 2 sound device is available the it goes up to 4 channels.

- **Select Channel :** Choose number of recording sound channels.

-**Select Camera :** Selects the camera channel(s) that will record sound with the accompanying image recordings.

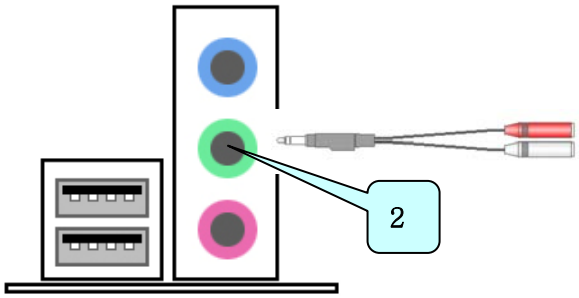
* Connect to Audio

1 Channel sound



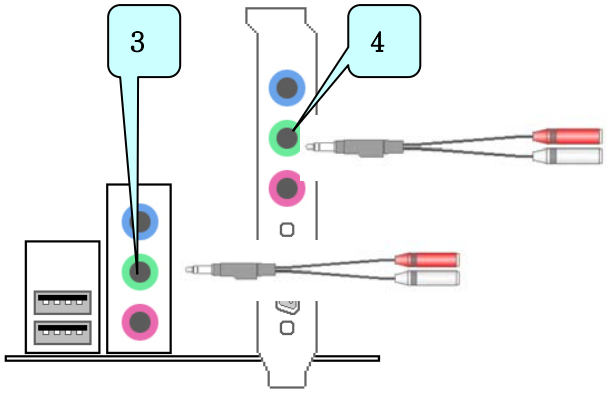
1) Connect to “Microphone In” of sound card

2 Channel sound



1) Connect to “Line In” of sound card with included 2 channel audio cable.
2) Connect microphones to the audio cable.
   - Must use amplified microphone.

4 channel sound



1) Additional sound card is needed (total 2 sound cards – 1 onboard and 1 PCI).
2) Connect “Line In” in both sound cards with included 2 channel audio cable.
3) Connect microphones to the audio cables.
   - Must use amplified microphones.

★ 1 = Microphone In

★ 2~4 = line in

Key of Notes

1. You shall install updated versions of Direct X than or equal to Direct X 8.0.
2. Do not forget to use the amplification microphone.
3. Two way communications shall be made one by one channel.
4. **Do not use the same camera for different sound channel.**

11. Use E-mail

Method

--No SMTP : Find outgoing mail server(SMTP) automatically.

--SMTP/No Login : Use this option if you mail server is SMTP Server without Login process.

-- SMTP/Login/No RSA :

-- SMTP/Login/RSA :

-- SMTP/Login/RSA/MDS :

SMTP Server : Enter SMTP Server address.

User : Enter SMTP Server login User.

Password : Enter SMTP Server login Password.

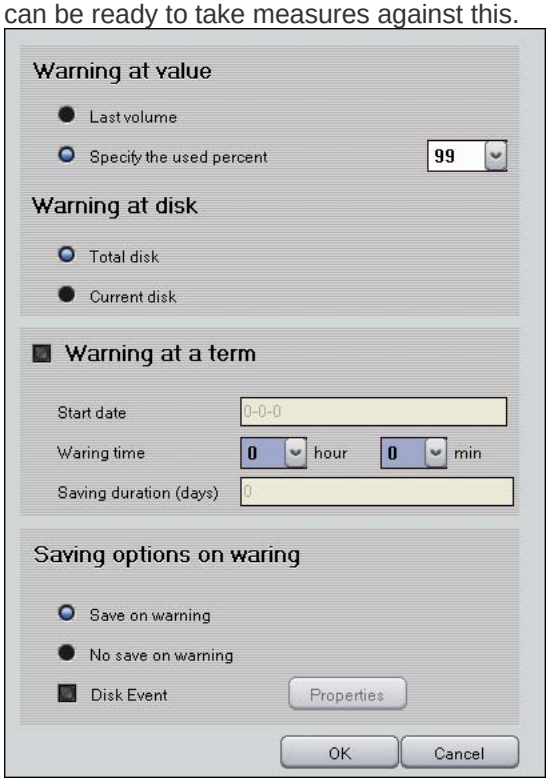
From Address : The designated email address of the system.

To Address : The email addresses of the people who will receive email notifications from the system.

Test : Test the email by sending an testing email.

12. Warning on disk full

Whenever not more than the preset value in the volume unit or percentage was left in unrecorded volume, you may have some warning against this by going off the warning on screen so that operators can be ready to take measures against this.



- Warning at value;

- **Last volume**: if you check it, the typed figure is to become the preset value for warning.

- **Specify the used percent:** you can take the preset value by % of target volumes within the range of 90-99 %. The target volume, mentioned here, may be changed subject to next option in “Warning at disk**”.**

- Warning at disk

- Total disk: If you check this, above preset value, mentioned in “Warning at value” is to be regarded against totally created volume in all of disk. For example, when you set the volume 100 in drive C, 200 in drive D, the specified last volume is accounted as that against 300 volumes.

Current disk: If you check this, above preset value, mentioned in “Warning at value” is to be regarded ag ainst the created volume in each of disk. For example, when you set the volume 100 in drive C, 200 in drive D and currently DVR is using DB of drive D, the specified last volume is observed it against 200 volume in drive D.

Warning at a term : This feature is made to give the alarm in advance when it comes to be reached at the pre-schedule duration for recording in days.Firstly**,** pre-determine the required period for saving of DVR data in days. When you wish to get the warning at the preset time before filling of disk, you can input the desired preset time in hour: minutes.

- Start date: As for this purpose, It is the starting day in counting fro recording.

- Warning time : This is the warning time (hour; minutes) at calendar date to be due after "Saving duration(days) " since the saving has been started.

- Saving duration(days) : The target saving days.

Thus, this feature explains : when "Start date" is 2005/11/25 and "Warning time" sets as 09:00 and "Saving duration (days)" is 10 days, then the warning goes off at 2005/12/5/ 9:00.

-Saving options on Warning : This is the options to accept or not the overwriting against the message before it starts overwriting after DB volume has been filled.

- **Save on warning**: Checking allows overwriting DB files after volumes have been filled fully.
- **No save on warning**: Checking doe not allow overwriting on DB file. At this moment, the recording is stopped no matter what the recording schedule was made.
- **Disk Event** : Configure event when message shows up.(Refer to Chapter **3-6**)

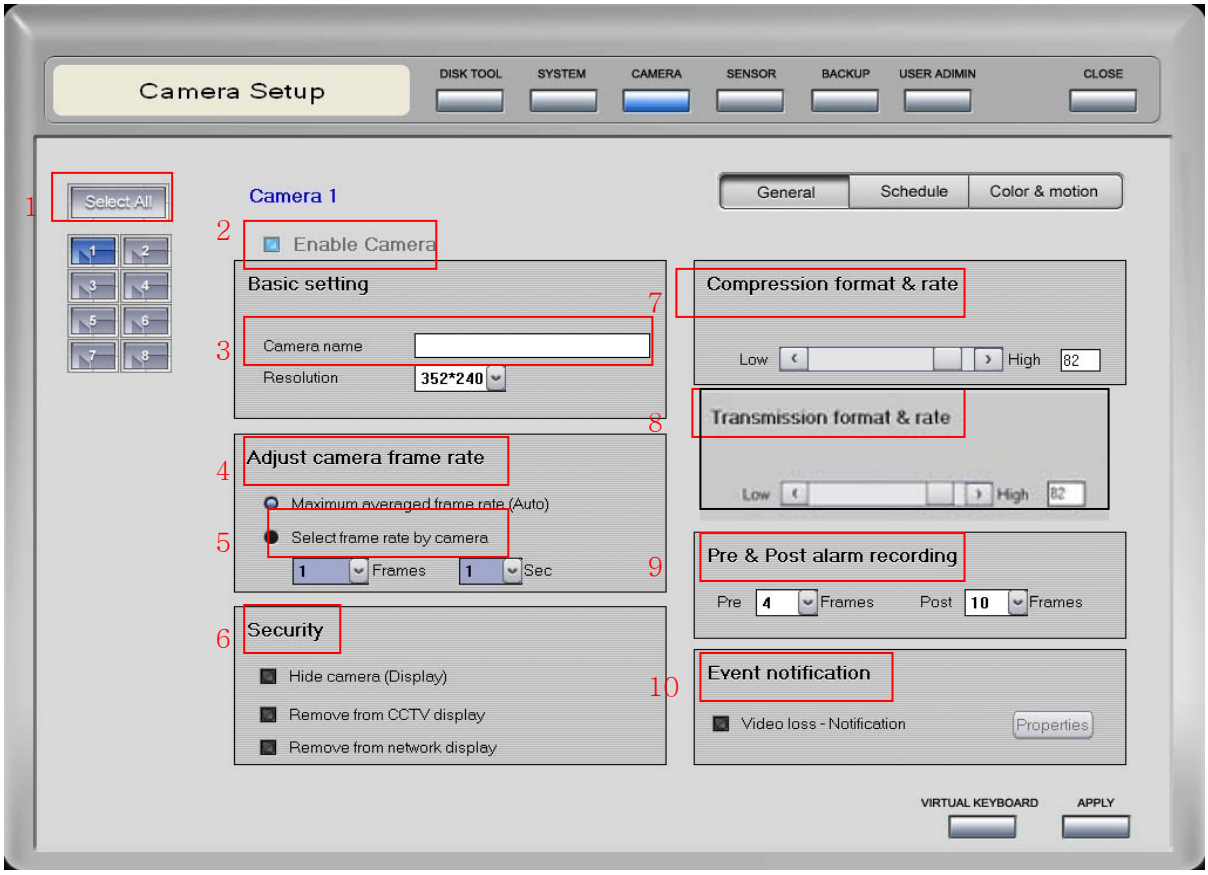
13. Setting log off timeout : It is the valid time in minutes from login to logout. Only during this period, all of key-in and configurations may be valid (indicated "log-out"). If you want to set another after this set time has passed (indicated "log-in"), you shall be required to input the log-in again.

14. Burn CD: Select CD burning program (CD burning program will start once CD Burn button is selected in Search program)

Remember pushing the "**Apply**" button to complete the settings of individual camera.

3-3 Camera

3-3-1 General



1. **Select All :** If selected, the settings selected in “General”, “Schedule”, “Color & Motion” will be applied to all the cameras.
   If you would like to customize each camera uniquely, select a camera from the buttons on the left of the menu (1-16) FIRST, then choose the following options
2. **Enable Camera** : Check the box to enable camera. (Ch1 camera is always enabled.)
   User must exit the main program then set up this function under "DVR setting"
3. **Camera Name** :
   Insert the name of the camera location. (Name will be displayed in Main screen.)

- **Resolution:** Choose the desired resolution for the camera. (Note: the higher the resolution size of the recording will lead to a slower frame rate..)

Data can be updated, but that will be applied from next time you restart main program

4. Adjust camera frame rate

- **Maximum averaged frame rate:** Choose to record data on the Capture Card with the greatest frame per second rate possible.

5. Select frame rate by camera: Set the number of frames per second to be recorded.

6. Security

- **Hide camera (Display)**: Choose to hide camera images from the PC monitor.
- **Remove from CCTV display**: Choose to block camera images from going out the Composite-Out port.
- **Remove from Network display**: It makes the images not to send to DVR-Net .

7. Compression format & rate : change the compression rate.

Data can be updated, but that will be applied from next time you restart main program

8. Transmission format & rate

Choose the format and the compression rate for the images transmitted through the network program.

a. Data can be updated, but that will be applied from next time you restart main program

9. Post alarm recording

: In order to enable this, you should select “Motion” or “Sensor” in 'Scheduling' menu.

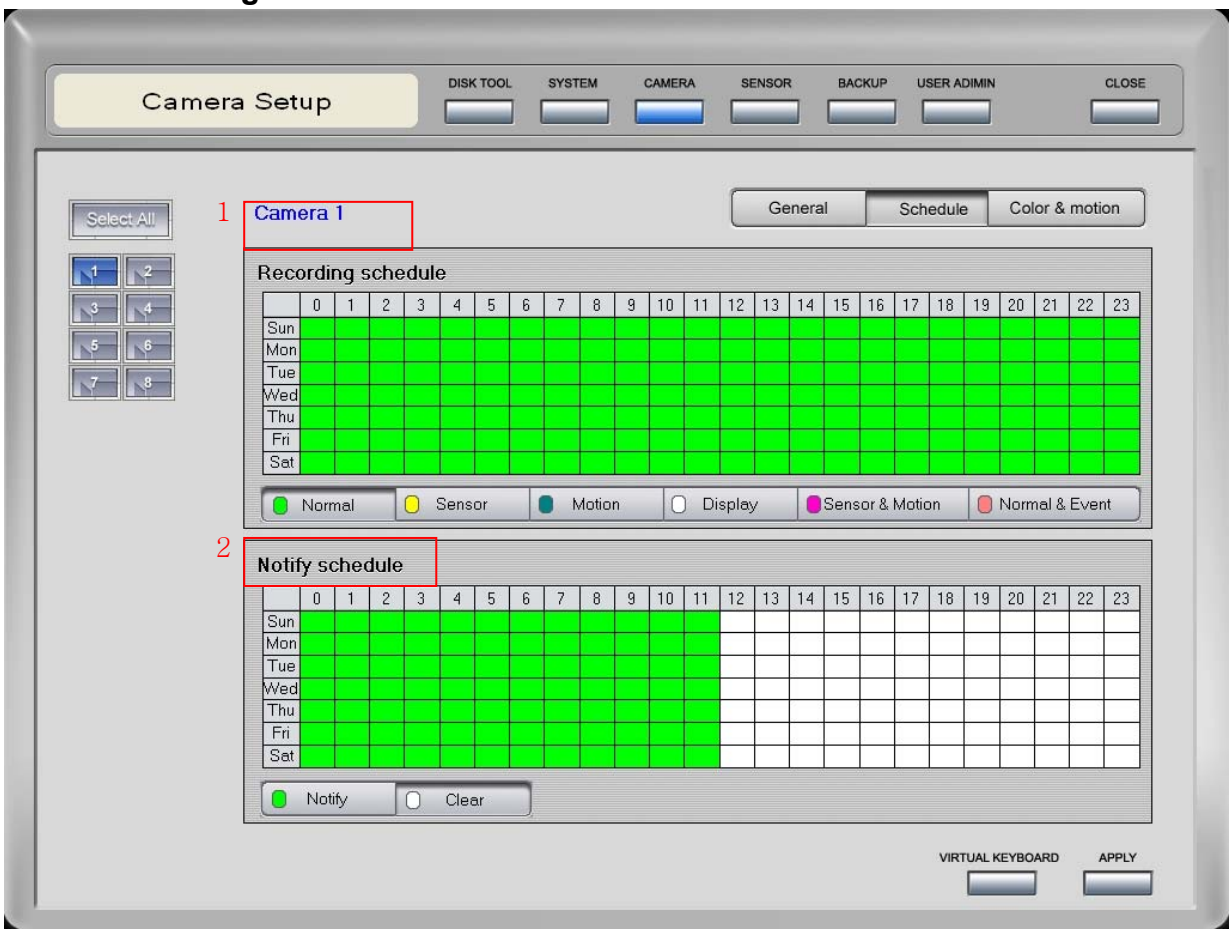
- **Pre** : Recording frame number prior to a Motion detection or Sensor trigger.
- **Post** : Recording frame number after a Motion detection or Sensor trigger.

10. Event notification

-Video loss - Notification : Choose event for Video Loss(Refer to Chapter **3-6**)

Remember pushing the "**Apply**" button to complete the settings of individual camera.

3-3-2 Scheduling



Choose the time (set by hour and day-of-the-week) for recording images of the camera from the Scheduling menu.

1. Recording schedule

- **Normal** : All images captured on the camera is to be recorded.
- **Sensor** : Record images only when the sensor is triggered.
- **Motion** : Record images only when motion is detected.
- **Display** : Choose not to record images, just for view.
- **Sensor & Motion** : Record images when the sensor is triggered or motion is detected.
- **Normal & Event**: Record only one(1) fps(frame per second) when no motion (or sensor) is detected, but continuous recording once when detection occurs.

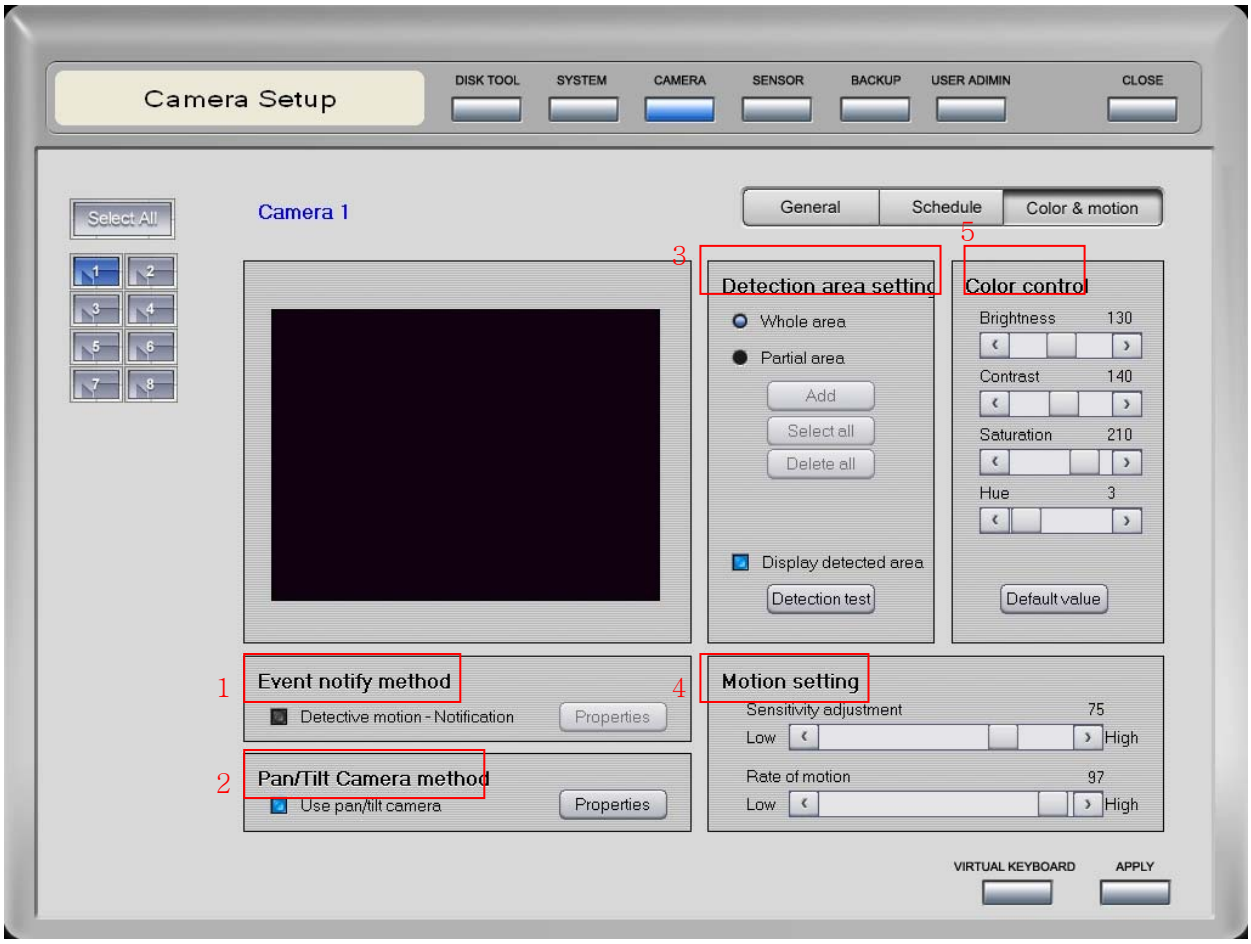
2. Remote notify schedule

On this menu, schedule appropriate times in which the system should send remote notifications.

- **Notify :** Press “Notify” and set up the desired time and day-of-the-week.

Remember pushing the "**Apply**" button to complete the settings of individual camera.

3-3-3 Color & Motion & PTZ



This menu allows the user to control the color of the recorded images, modify motion detector settings, and set up relay outputs (sirens, locks, etc.) for the system

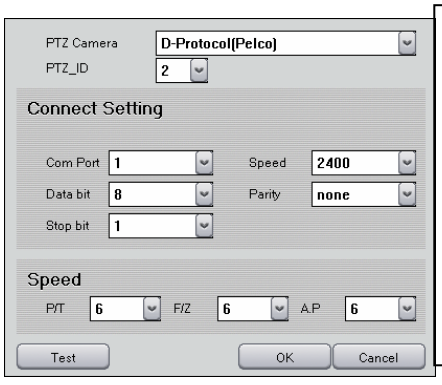
1. **Event notify method**

   - When a video loss happen, relay out : Setup event of video loss.

   (Properties : Refer to Chapter **3-6**)

2. **Pan/Tilt Camera Method**

   - Use pan/tilt camera : Check this box when using PTZ cameras.



PTZ Camera : Choose the make and model of the camera.

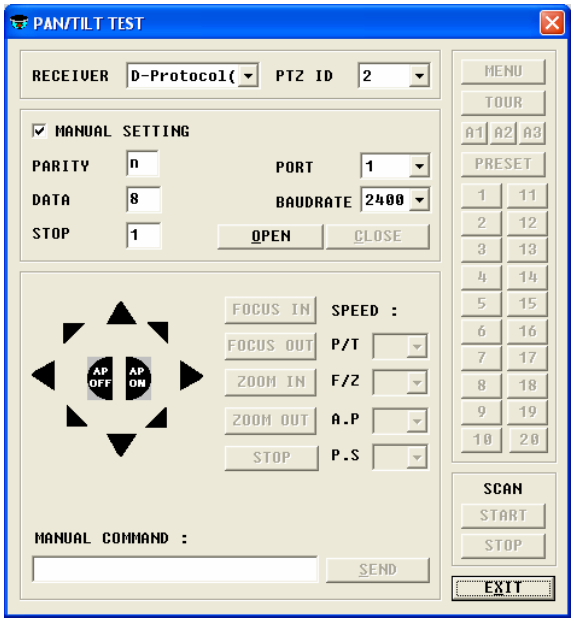
PTZ_ID : Choose ID(address) of PTZ camera.

Connect Setting :Refer to camera manufacturer's documentation to set these values.

Speed : P/T-Pan/Tilt speed, F/Z-Focus/Zoom speed, A.P-Autopan speed

(Depending on PTZ camera Speed might not be adjustable.)

- Test : Test PTZ camera.



- **RECEIVER** : Choose PTZ camera
- **PTZ ID** : Choose ID of PTZ camera
- **MANUAL SETTING** : Selects the serial port that the camera uses to connect to the computer. Refer to camera manufacturer's documentation to set these values.
- **OPEN** : Open the connection to take control of PTZ camera.
  ARROW, FOCUS, ZOOM, AP, SPEED : Test each functionality.
- **MENU** : Bring the PTZ camera menu.(Depending on protocol it might not function.)
- **TOUR** : Tour the preset of camera.
- **A1, A2, A3** : Test Extra feature of the PTZ camera.(Depending on protocol it might not function.)
- **Preset numbers 1~20** : Move camera to each preset position.
- **PRESET** : Setup of waypoints can be done by doing the following:
  1. Click "Preset" and press one of the numbered buttons.
  2. Move the camera view to a desired location.
  3. Click the same numbered button and the "Preset setup" again so that they are no longer active.
- **SCAN** : Only available with camera that supports AutoPan scan function.
- **START**-Press START from the beginning position.
- **STOP**-Press STOP at the ending position.
- **SEND** : Manually give Hex value and send it to the camera.

Support Protocol type

TYPE1=HRX-1000(Honeywell)
TYPE2=HRX-2000(D1)(Honeywell)
TYPE3=GC-655/755(Honeywell)
TYPE4=D-Protocol(Pelco)
TYPE5=HRX-2000(D2)(Honeywell)
TYPE6=Panasonic
TYPE7=Philips
TYPE8=Kalatel
TYPE9=Cannon
TYPE10=PT102N(C&B)
TYPE11=CRR1600i(Fine)
TYPE12=DRX500(Dongyang)
TYPE13=5-Series(Pelco)
TYPE14=PIH7000(Lilin)
TYPE15=HSD251(Honeywell)
TYPE16=LPT-A100L(LG)
TYPE17=SERIM
TYPE18=SpeedDoom Series(SensorMatic)
TYPE19=DY255-DRXB(Dongyang)
TYPE20=DSCP
TYPE21=SAE Elec. SpeedDome
TYPE22=CRD-J6416
TYPE23=KPC-S38CZH
TYPE24=StarPT
TYPE25=CCD Control Box
TYPE26=SSP(Samsung Protcol)
TYPE27=SPD1600(Samsung)
TYPE28=NKH-97CHE(NikoPT)
TYPE29=CP-32M(CommaxPT)
TYPE30=MD-1000 Series
TYPE31=SecuMera Pro(TechnoVision)
TYPE32=HSDN-251(Honeywell)
TYPE33=WPT-101(Wonwoo)
TYPE34=P-Protocol(Pelco)
TYPE35=SCC421(Samsung)
TYPE36=SJ3728R1(Sungjin)
TYPE37=Vicon
TYPE38=SCC641(Samsung)
TYPE39=EVI-D30/31(Sony)
TYPE40=SRX100B(Samsung)
TYPE41=KRE301(Kodicom)
TYPE42=ORX1000(Kodicom)
TYPE43=KRE303(Kodicom)
TYPE44=Dragon
TYPE45=THZ2201PT(American)
TYPE46=Echelon-9107
TYPE47=Vicon VPS
TYPE48=KSD-18DN(KODO)
TYPE49=WSJ Series(Wonwoo)

3. Detection area setting

- **Whole area** : Detect motion at the whole area.
- **Partial area** : Click "Add“ and select specific area(s) to detect motion. Up to 10 partial area selectable and delete them all by “Delete All".

- Display detected area : If selected, regions with motion activated can be tested for sensitivity. any region with motion will show a group of red grid.

4. Motion setting

To receive desired optimal detection, configure the following options.

- **Sensitivity adjustment** : Adjusts the level of color difference detection between the foreground and background..

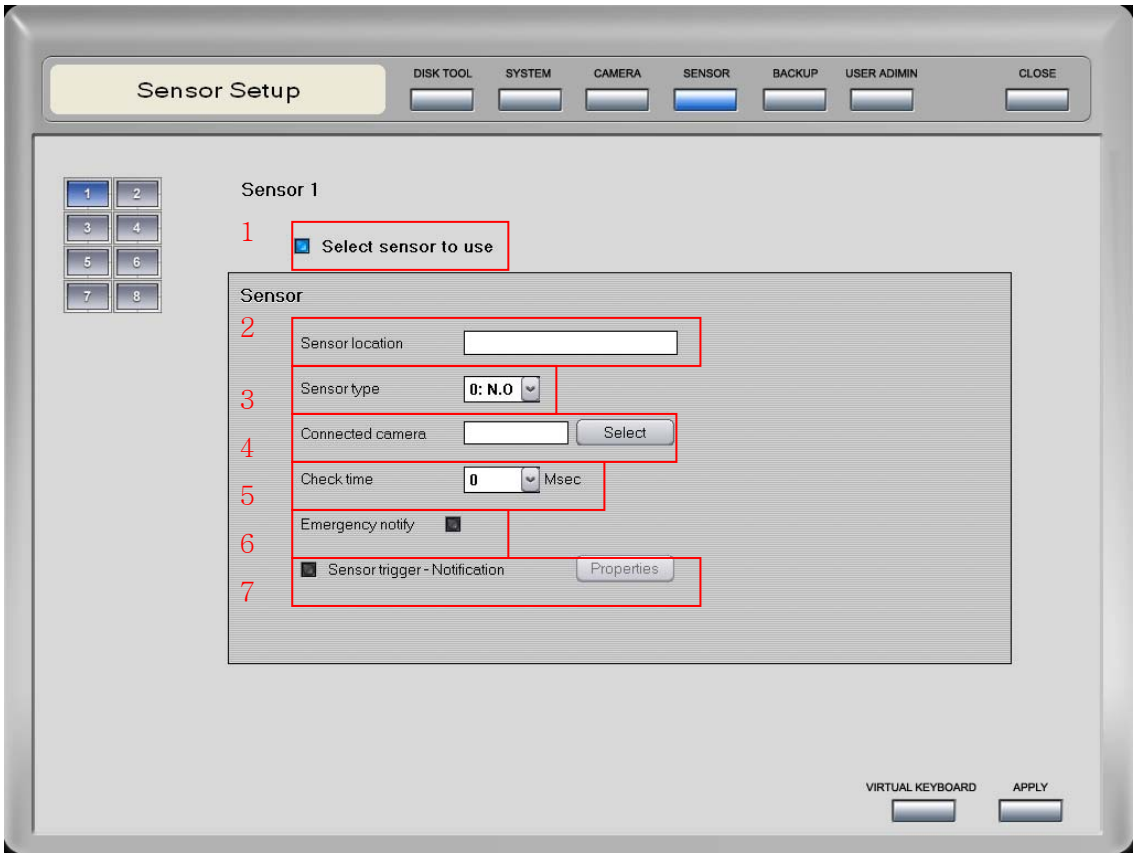
- Rate of motion : Adjusts the rate of motion detected by the camera – if the number is higher, the camera will be able to better pick up slower moving objects.

5. Color Control

- **Brightness** : Brightness
- **Contrast** : Contrast
- **Saturation** : Saturation
- **Hue** : Hue
- **Default Value** : Set to default value.

Remember pushing the "**Apply**" button to complete the settings of individual camera.

3-4 Sensor



1~16 sensors can be connected, and sensor activation can be linked to Digital Outputs and cameras.

1. Selected sensor to use: Check the box of the chart on the bottom half of the screen to choose specific group which sensors to use.

2. Sensor location : Input the position of the sensor.

3. Sensor type : Choose the sensor type being used. (Sensor activation: 0-NO, Sensor disables while sensor activated: 1-NC)

4. Connected camera : Choose the camera to enable recording when sensor is activated.

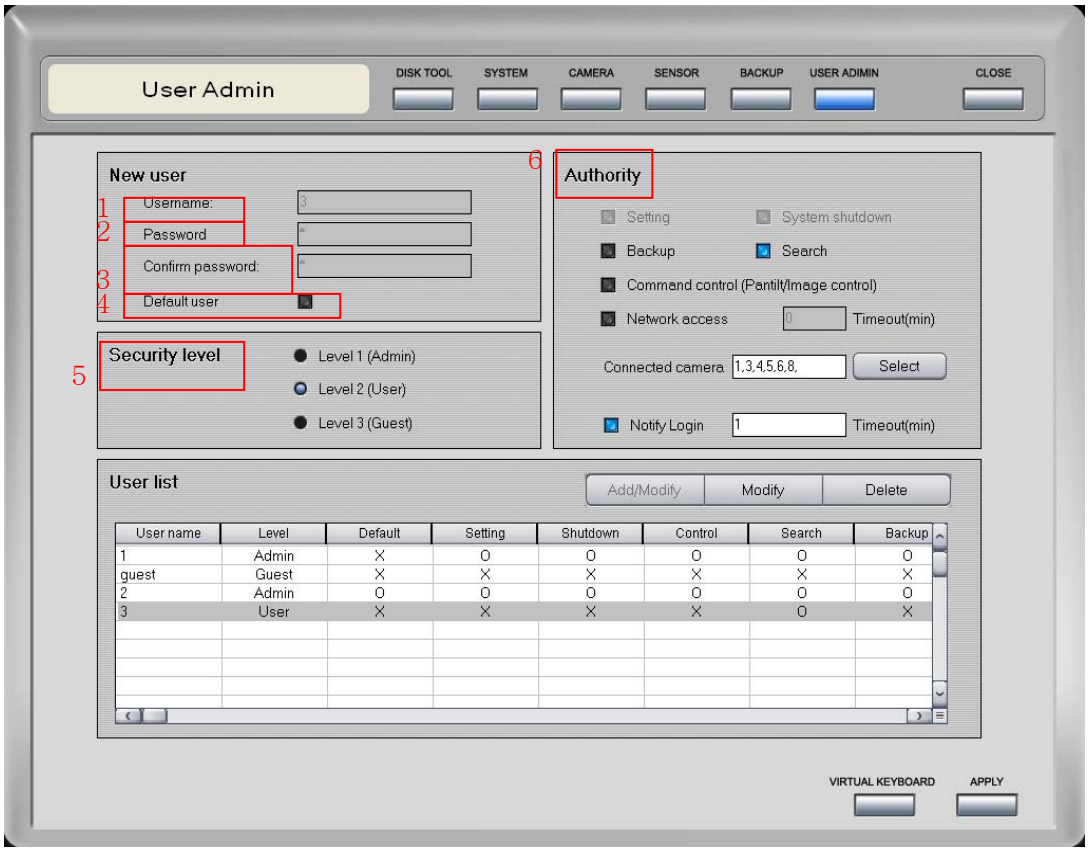
5. Check time : Check for sensor movement every designated interval.

6. Emergency notify : Regardless of “Remote notify schedule” in “Schedule”, if you checked “Remote notification of events’ in “System Setup” of Settings, Notification can be sent on the event of sensor trigger, to the desired destination.

7. Properties Sensor : Choose event for sensor detection(Properties :Refer to Chapter **3-6**)

Remember pushing the "**Apply**" button to complete the settings of individual camera

3-5. User Admin



1. User Name - Input name of admin or user.

2. Password - Input password.

3. Confirm Password - Password for check.

4. Defaut user –when you log in DVR program, program will login with default user.

(Admin can't set as "default user")

5. Security Level - Select the level of the authority.

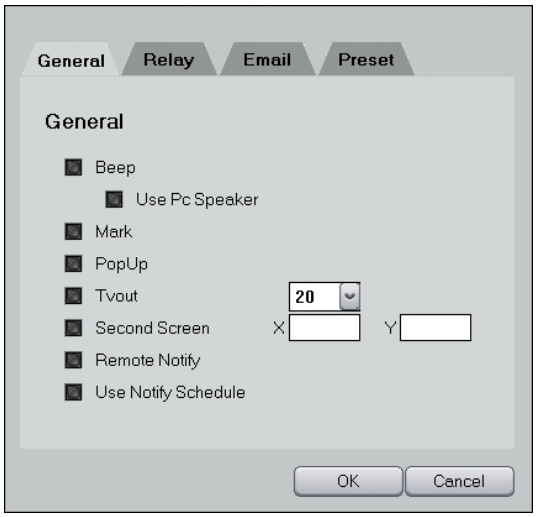
6. Authority - Assign the functions to which the admin. Will have authority.(if you set Network access, you can set the user timeout for net-dvr login)

After filling the user information and checking the appropriate boxes, push the "Add/Modify" button to register the admin. information. To change the status of an existing administrator, click on the administrator from the graph and make the desired changes.

To delete an administrator or user, click on the desired admin. and push the "Delete" button.

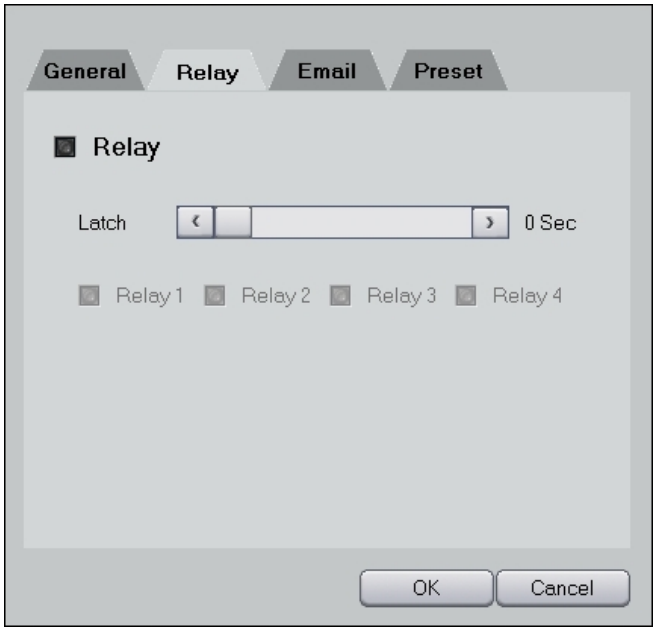
Remember pushing the "**Apply**" button to complete the settings of individual camera

3-6 Event Setup

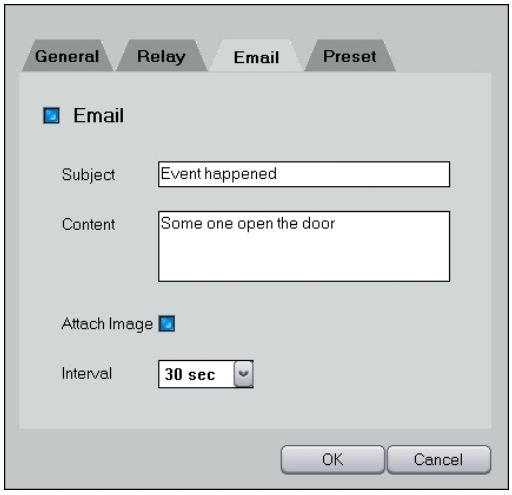


Depending on events, different action can configured and take place.

- **Beep** : Play Beep on sound card.
  - Use PC Speaker : Play Beep on PC speaker (Sound card is not required)
- **Mark** : Display Red dot on camera screen.
- **Popup** : Display 1 view Popup in the Main.
- **TVout** : Display the camera through Composite out for selected time period (in seconds)
- **Second Screen** : If system has second monitor, display popup on the selected coordinate of second monitor.
- **Remote Notify** : Notify to the Net program(remote client).
- **Use Notify Schedule** : Use notify schedule (Camera – Schedule – Notify schedule).



- **Relay** : Output 1~4 Relay for desired Latch time(seconds).



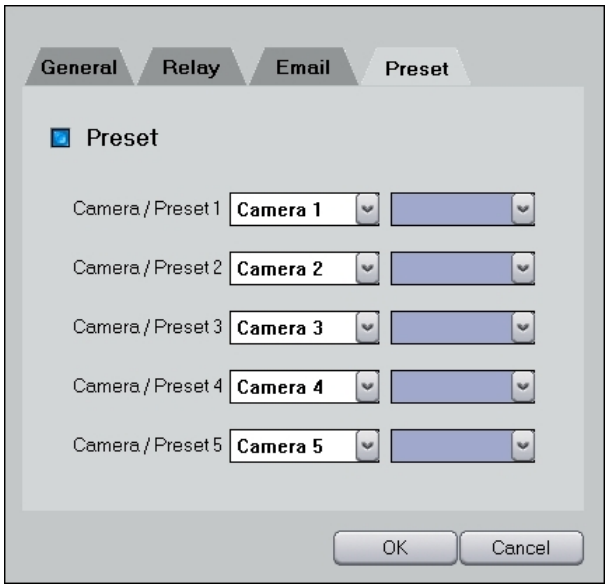
- **E-mail** : Send an E-mail. (In System setting email must be configured.)
  - Subject : subject of email
  - Content : E-mail content
  - Attach Image : Attach video image.
  - Interval : Email will be sent once for every selected time interval.

  Note: This table will help complete the Subject and Content fields.

Reserved word	Contents
$$0	Camera No.
$$1	Events
$$2	Time
$$3	IP address

Example) Subject : "At $$2, $$1 triggered at number $$0 camera.

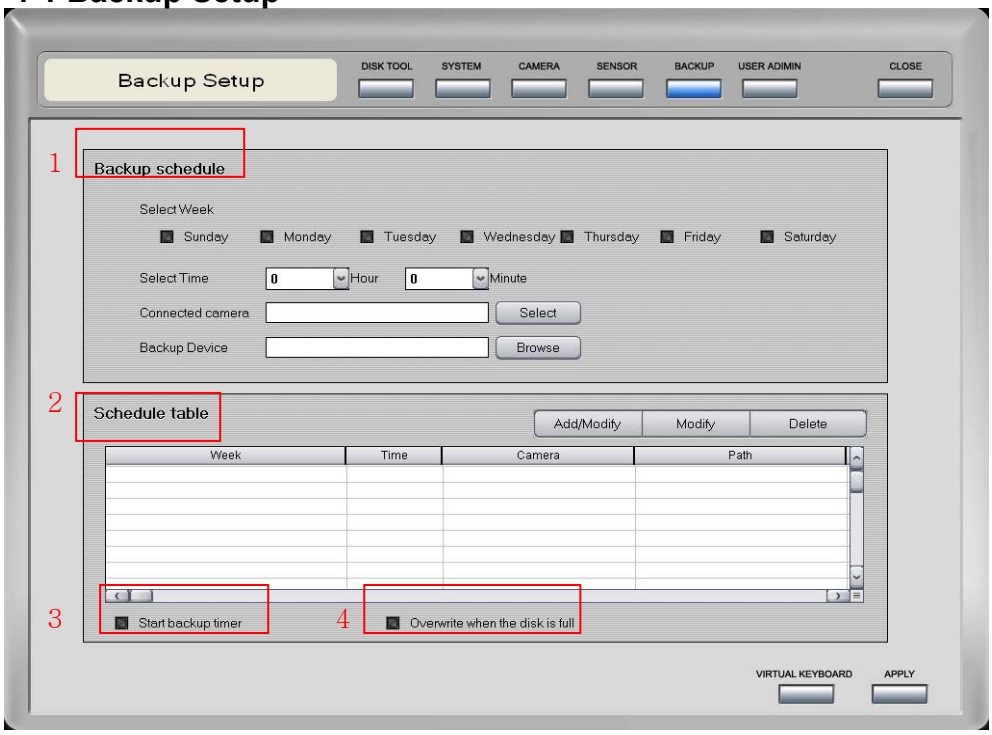
Subject: "01-18-2005 19:10:12, Motion triggered at number 3 camera.



- **Preset** : If selected sensor is tripped, this feature allows the selected camera to focus in on the selected preset.

4 Utility

4-1 Backup Setup



Recorded images can be backed up automatically if a backup schedule is set. **Automatic backup is enabled only after executing "Backup.exe" afterwards!**

1. Backup Schedule

- **Select Week** : Select day of a week to start the backup.
- **Select Time** : Select time of a day to start the backup.
- **Connected camera** : Selects which cameras' recorded images are to be backed up.
- **Backup Device** : Chooses the location where backed up data will be placed (default is C drive). Data can be recorded on CD or DVD, and any media shown as a storage device on the computer.

2. Schedule table

- **Add/Modify** : Add new/modified schedule in the list.
- **Modify** : After any changes applied to existing schedule click "Modify".
- **Delete** : Delete selected backup schedule.

3. Start backup timer : Automatic backup will begin once the backup program is activated. To verify automatic backup is taking place, check to see if the backup program icon has been placed in the system tray

4. **Overwrite when the disk is full** : During automatic backup, hard disk will get overwritten if it is full.(Overwrite starts from the oldest backup data.)

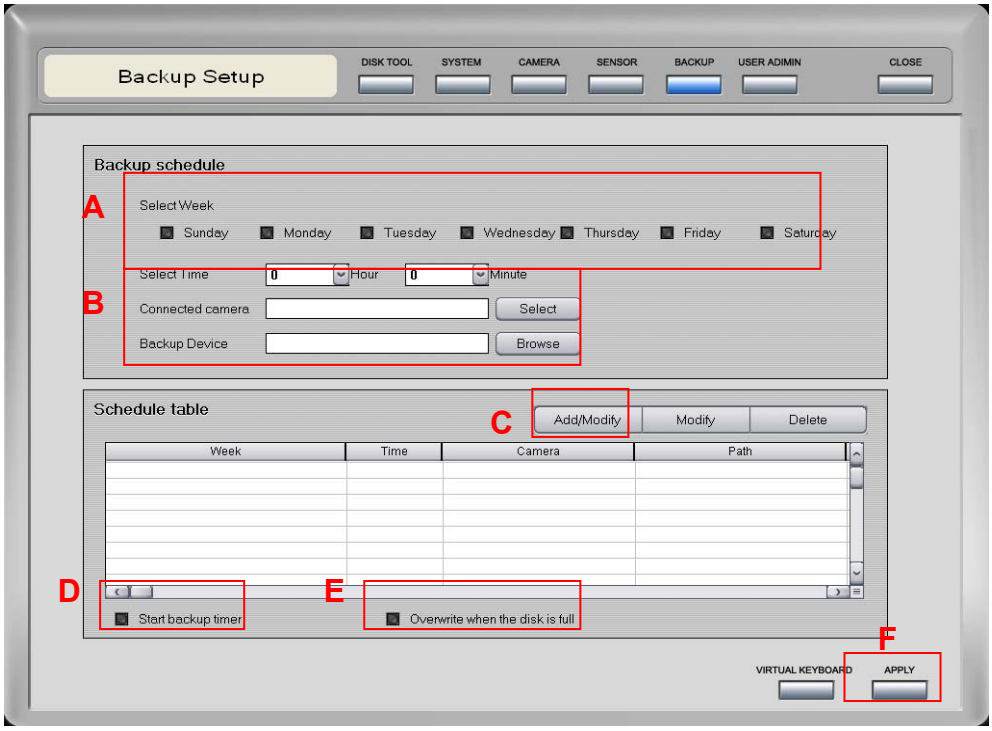
Backup always starts from end of last backup session. (First time Backup will start from the very beginning of recorded data)

When finished the Backup settings, be sure to run the Backup EXE file before starting the main program, otherwise scheduled backup will not work automatically.

Remember pushing the "**Apply**" button to complete the settings of individual camera

4-2. Setup Auto Backup

1. DVR-Setting→Backup



A. select “week” “hour” and “minute”, Backup program will start backup at this time

B. select “connected camera” and “backup device”

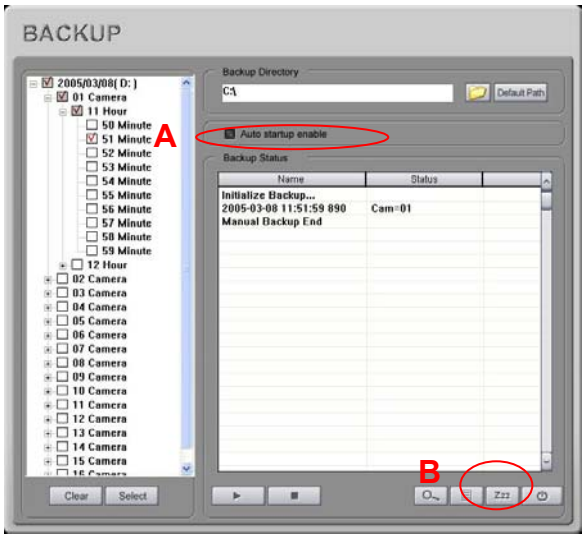
C. Click “Add/modify” button

D. check “start backup timer”

E. select “Overwrite when the disk is full “ During automatic backup, hard disk will get overwritten if it is full. (Overwrite starts from the oldest backup data.)

F. Apply

2. [Start]→[Programs]→[DVR SYSTEM]→[Utility]→BACKUP



A. Check “Auto startup enable”

B. click the button “Zzz” to task bar

3. Then close DVR-Setting and execute DVR-Main

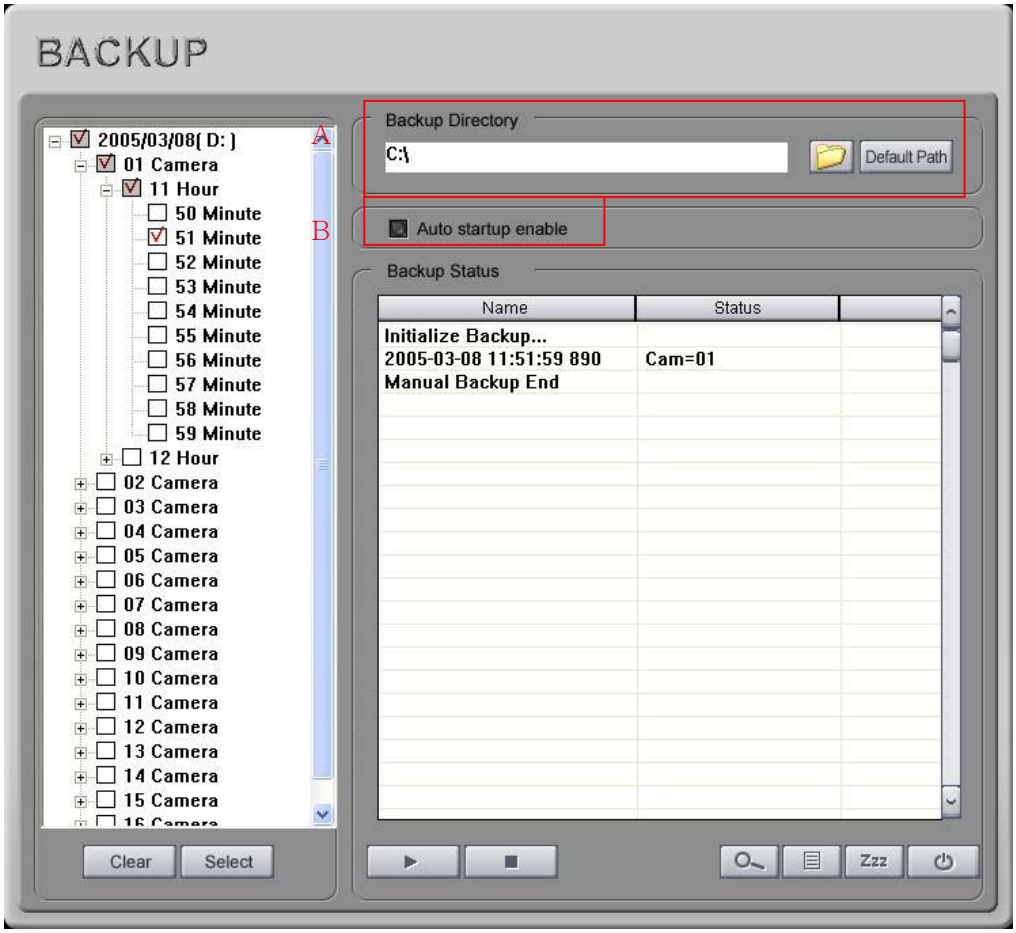
What is “Start backup timer”

Ex: Make backup at 12:00(Sunday) and set ”start backup timer”. It means that DVR will make back up from 12:00 until next time of backup. Make next backup at 18:00 Wednesday, DVR will record the backup during 12:00(Sunday)~18:00(Wednesday) and start next backup.

3.DVR-main

When times up, the screen will like this.

4-3 Manual Backup



Data can be backed up manually through this program simply by selecting the desired folders and subfolders. This type of backup process allows selected data to be backed up.

- On the left window, choose the desired camera, date, hour, and minute to backup. The progress is monitored at the right window.

A. **Backup Directory** : Destination of backed up files. CD, DVD, Network drive can be used.
Default Path : Click this to set the folder to default back up folder. Backup will store files in this folder from now on.

B. **Auto startup enable** : By clicking this button, the Backup command is valid even though you might reboot the system. At this moment, the tray icon for this shall be seen at the screen bottom.

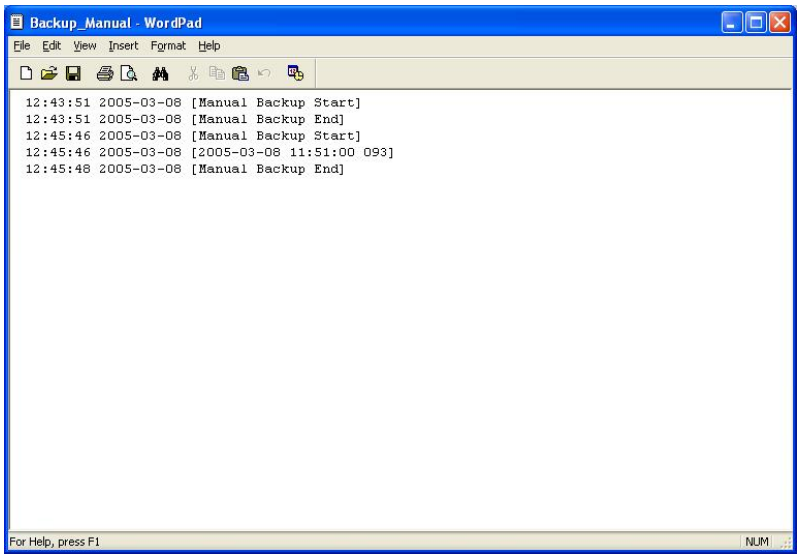
Clear : Resets all settings.

▶ : Start backup.

: Stop Backup.

: Run Backup Viewer.

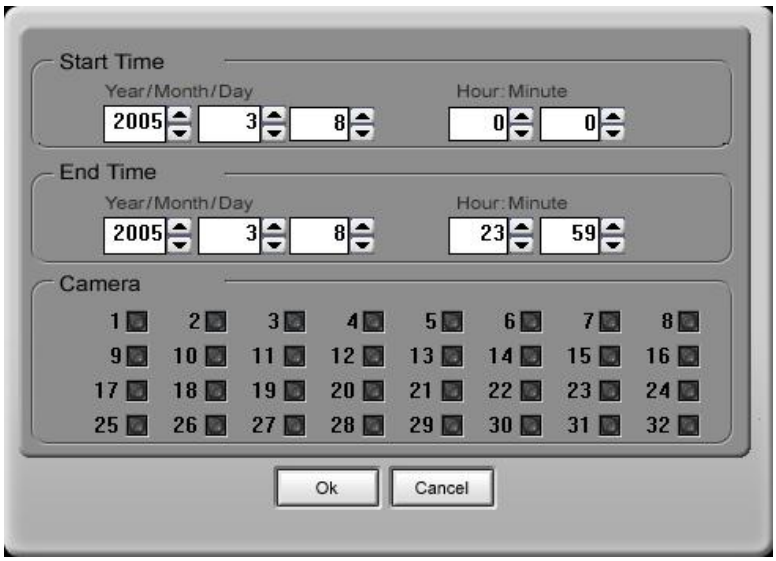
: Log for backup history.


Backup_Manual - WordPad
File Edit View Insert Format Help
12:43:51 2005-03-08 [Manual Backup Start]
12:43:51 2005-03-08 [Manual Backup End]
12:45:46 2005-03-08 [Manual Backup Start]
12:45:46 2005-03-08 [2005-03-08 11:51:00 093]
12:45:48 2005-03-08 [Manual Backup End]
For Help, press F1
NUM

: Standby mode for backup – setup this mode for auto backup to take place

: Exit from the backup program.

: Select “Start Time”, ”End Time” and “Camera” to backup.



4-4. Backup Viewer

Backup Data can be reviewed with only the "Backup Viewer" program, on a search-by-date basis.

Date Goto	'**Date**' : Choose the specific date desired for search. If the dates do not appear on screen, push the "Date" button below. '**Goto**': Directly to select date and time that you want.
Smart Search Save As Print AVI Save CD Burn	**"Smart Search"**: Use for more quickly to find out when the object moved. **"Save As"** : to save the current image, **"Print"** to print it out. "**AVI Save**" button to save motion picture images from that point to the point you choose to stop as an .avi file. **"CD Burn":** Start CD burning program
Search Image Tool	"**Search**" button to use the SEARCH menus, "**Image tool**" button to use the Image Tools menus.
C	Image information display on/off button
	You can take the data from the backup data as per every date

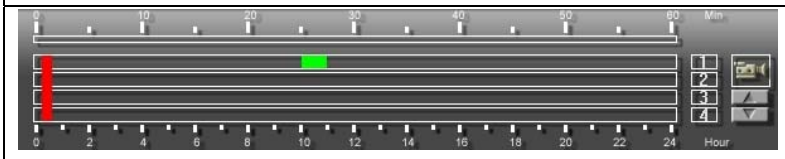
SEARCH menu appears as the "Search" button is pressed. You can play images both forwards and backwards, and search image by image, also both forwards and backwards

IMAGE menu appears as the "Image tool" button is pressed. Use the various options (Zoom In/Out, Sharpen, Soften, B&W) to adjust the image.

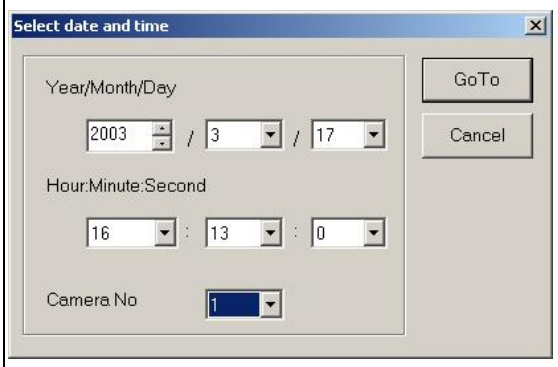
Push to end "DVR Search"

Switch Camera mode and sound mode by double click.

Use the buttons to scroll through cameras 1~4, 5~8, 9~12, 13~16.



The camera number (numbers on the right), hour (numbers on the bottom), and minute (numbers on the top) are indicated on the graph, and click the mouse to search the desired data.

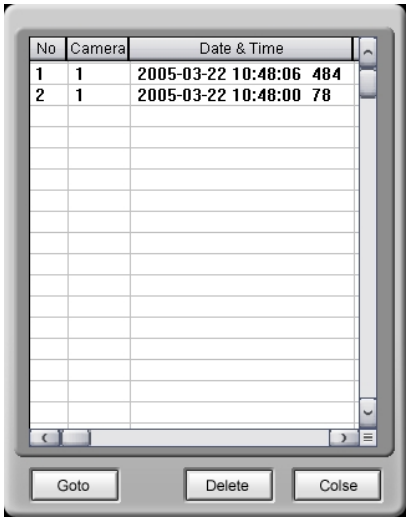


On this menu, select time and date to be searched directly and Click “GOTO”. Then the stored image files appear if the stored data exists as effective of that date and time. If not exists, the data, at the closest to that date or time, are searched.

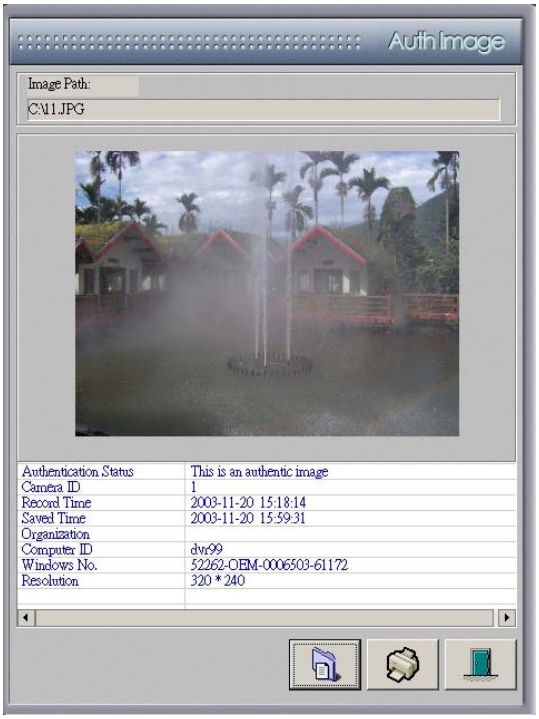
Refer to Chapter **5.Search**

: Remarks current searching point. (Bookmark)

List : Displays list of Bookmarked searching point. Move to the listed point by Double click or "Goto" button.



4-5. Auth Image Tool



This program deciphers images saved by the Search or Backup Viewer Program, and tells you when an image has been altered.

	Open an image to decipher. With real unaltered images, the image information appears as shown above, but nothing appears for altered images.
	Print image.
	End program.

4-6. AVI Viewer

This program allows you to watch Avi file saved as in MP4 type in Search or Backup Viewer.
However, if execution file is included while saving AVI, the file is saved as EXE file and has viewer inside the file. Thus no other viewer is needed in order to see it.

: Open MP4 file.

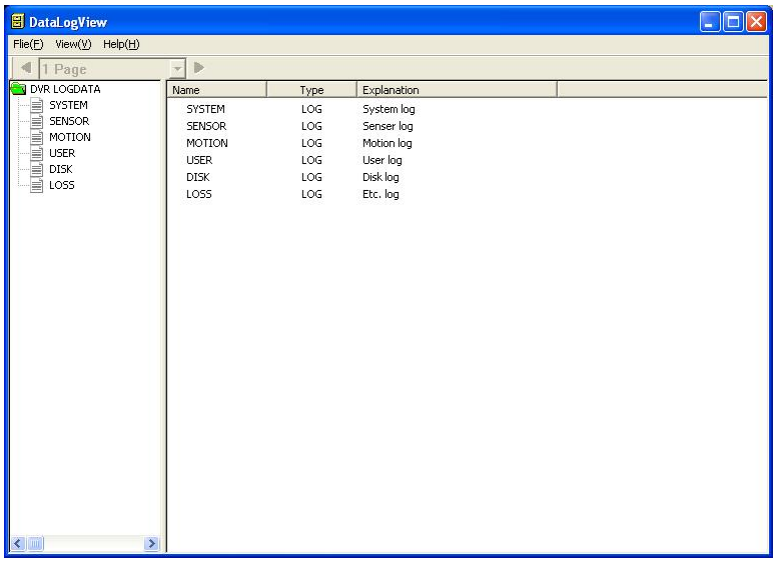
: Play, pause, stop button

: Play by 1 frame at a time (back and forth)

1x 2x 3x: Adjust image size.

: Sound button. Press before play the video.

4-7. Log Viewer



This program interprets Log file that is created during operation.

The log file contains following information.

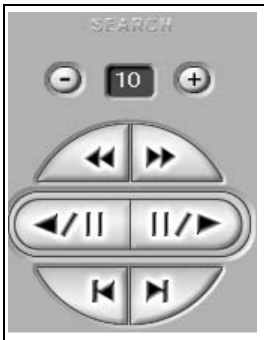
1. Start and end of program (Main, Search, and setting)
2. Motion and sensor record (time and camera number)
3. User login and logout record
4. Disk warning message (DB overwrite warning message)
5. Video loss record

5. Search

Search Single or Multiple image data according to date and time and camera.

Desired images can be saved separately and even be printed.

 	'**Date**' : Choose the specific date desired for search. If the dates do not appear on screen, push the "Date" button below. '**Goto**': Directly to select date and time that you want.
	"Smart Search": Use for more quickly to find out when the object moved. **"Save As"** : to save the current image, **"Print"** to print it out. "**AVI Save**" button to save motion picture images from that point to the point you choose to stop as an .avi file. **"CD Burn":** Start CD burning program
	"**Search**" button to use the SEARCH menus, "**Image tool**" button to use the Image Tools menus.
	Image information display on/off button



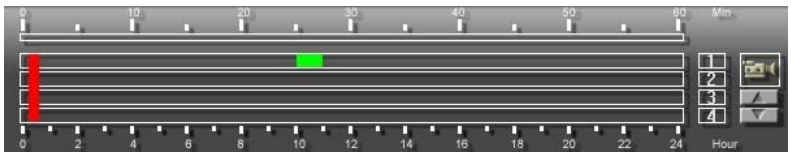
SEARCH menu appears as the "Search" button is pressed. You can play images both forwards and backwards, and search image by image, also both forwards and backwards

IMAGE menu appears as the "Image tool" button is pressed. Use the various options (Zoom In/Out, Sharpen, Soften, B&W) to adjust the image.

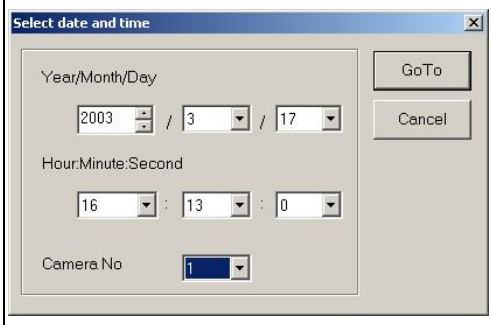
Push to end "DVR Search"

Switch Camera mode and sound mode by double click.

Use the buttons to scroll through cameras 1~4, 5~8, 9~12, 13~16.



The camera number (numbers on the right), hour (numbers on the bottom), and minute (numbers on the top) are indicated on the graph, and click the mouse to search the desired data.



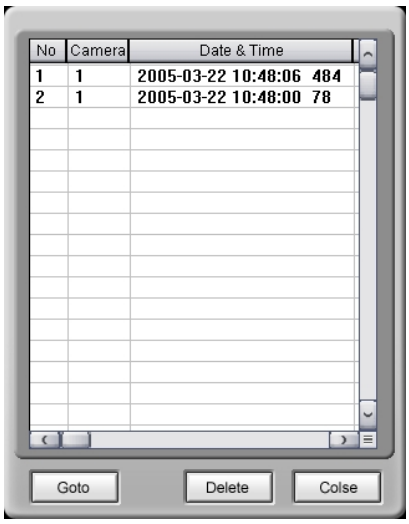
On this menu, select time and date to be searched directly and Click “GOTO”. Then the stored image files appear if the stored data exists as effective of that date and time. If not exists, the data, at the closest to that date or time, are searched.

CD BURN

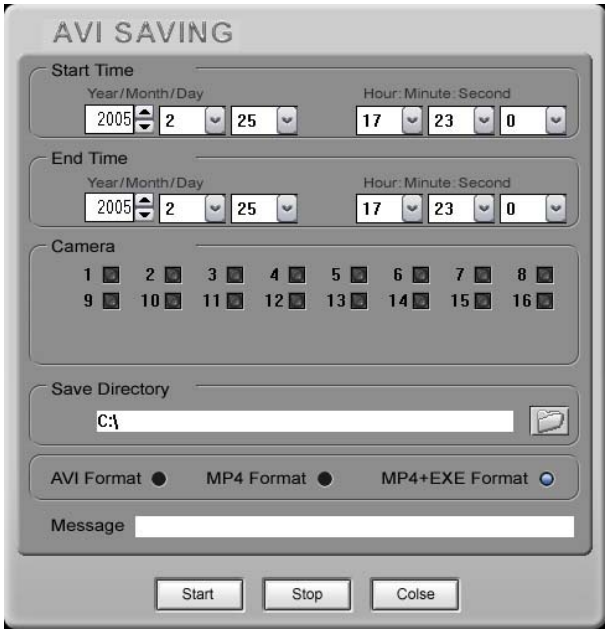
Start CD burning program

: Remarks current searching point. (Bookmark)

List : Displays list of Bookmarked searching point. Move to the listed point by Double click or "Goto" button.



When you click "AVI Saving", following menu appears, you can designate the camera No. and recording start / end time, folder location to be stored and data type. Now, press "Start" ,then AVI storage becomes to start.



AVI Format : Normal AVI (.avi) file which can be played with Windows Media Player.

MP4 Format : AVI file (.mp4) which only can be viewed by AVI Viewer.

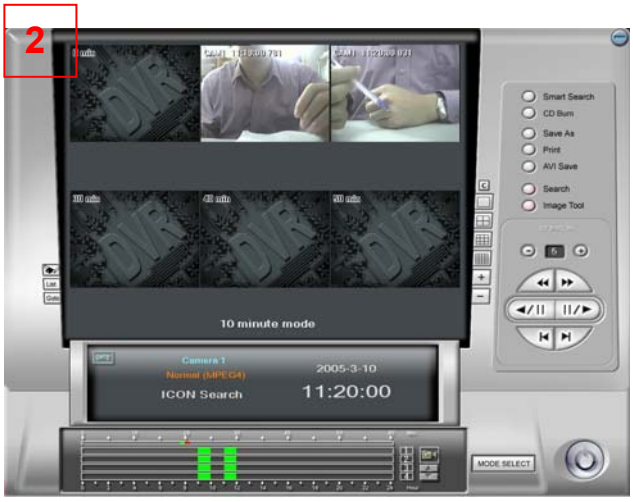
MP4+EXE Format : Self executable AVI file(.exe). (No Player needed)

Change Search mode to Common Search, Panorama Search or, Icon Search.

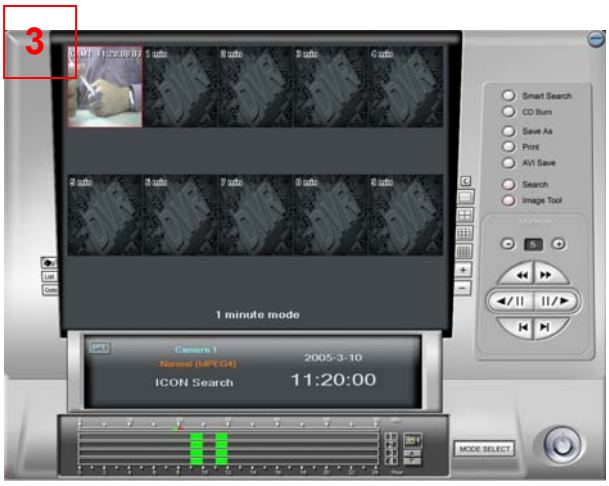
Common Search : Normal Search with Single and Multi-Search.

Panorama Search : Divide 1 camera recording into 16 multi view mode by each frame and perform search .

Icon Search : Based on time, divide 1 camera recording into multi section. Each screen represents specific time and it can be divided even smaller time period. This search is useful when user is not aware of time information of desired data. (24hour->10minute-> 1minute, Use double click on left and right mouse button to navigate)

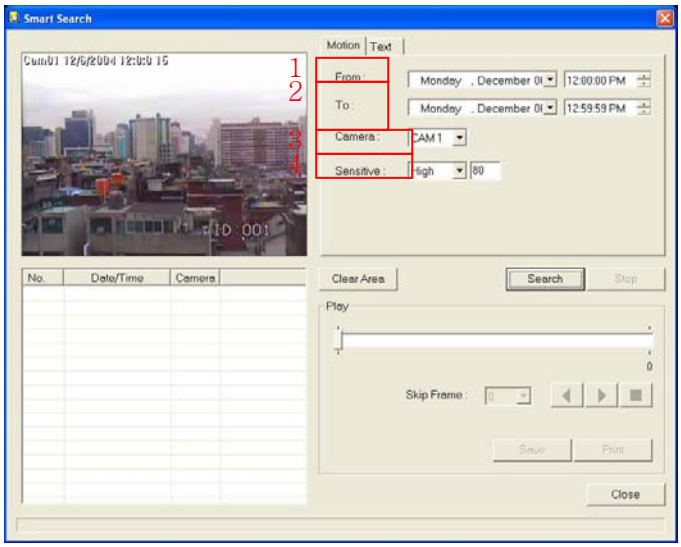


0~24 hour → **0~50 minute**



0~9 minute → **Final data search**

5-1. Smart Search



1. Date: date to be searched

2.Time: time to be searched

- **From**: starting Time to be searched
- **To**: ending time to be searched

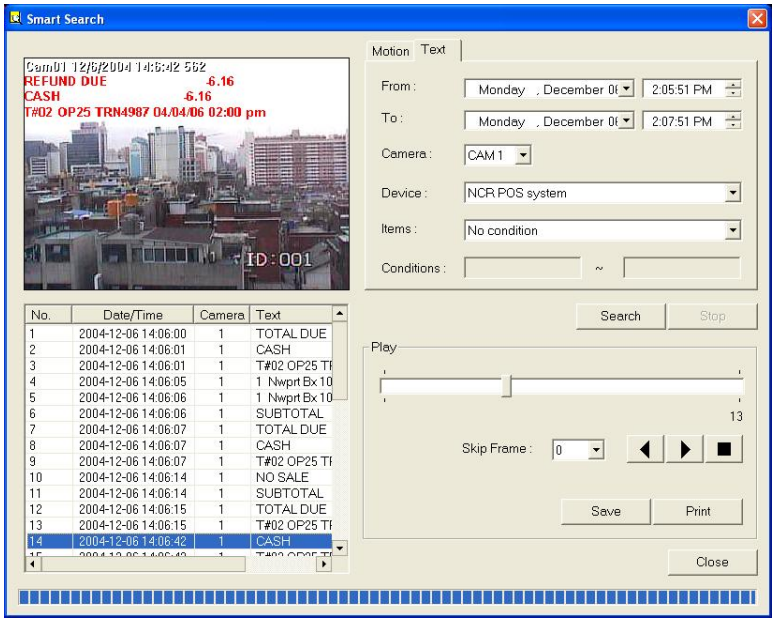
3.Camera: camera no. to be searched

4.Rate of Motion: No. of recording sensitivity at the area to be searched. The Sensitivity are ranged to High:60, Middle:40, Low:20. But by directly inputting the value, the results may be different.

Note: The lower No. of " rate of motion ", the higher sensitivity it has , The higher sensitivity has more precise detection. But it needs more data and takes more time to search.

Search	search the images per preset data.
Stop	It stops smart searching.
Clear Area	It deletes the designated area for smart search.
NO.	It indicates the total no. of image files searched by smart searching.
Skip Frame	If you feel inconvenient in handling the huge stored data, you can make the data file reduced to compact data file by skipping as much as the set values.
◀ ▶ ■	These tab are used for "Play", "reverse Play", "Stop" when searching data.
Save	It makes saving of data searched by smart searching function. (Save file is made with .BMP.
Print	It prints the searched data by smart search function.
Close	Close the smart searching process.

5-2 POS data search

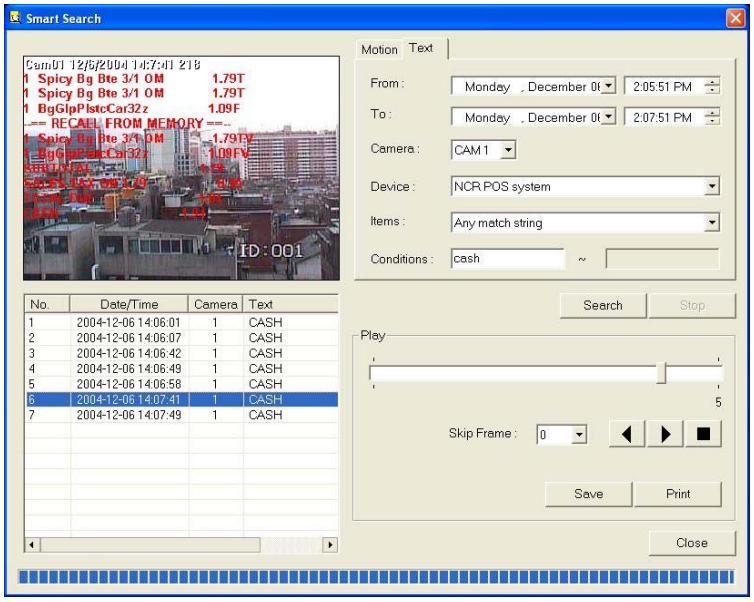


Run Smart Search and click Text tab.

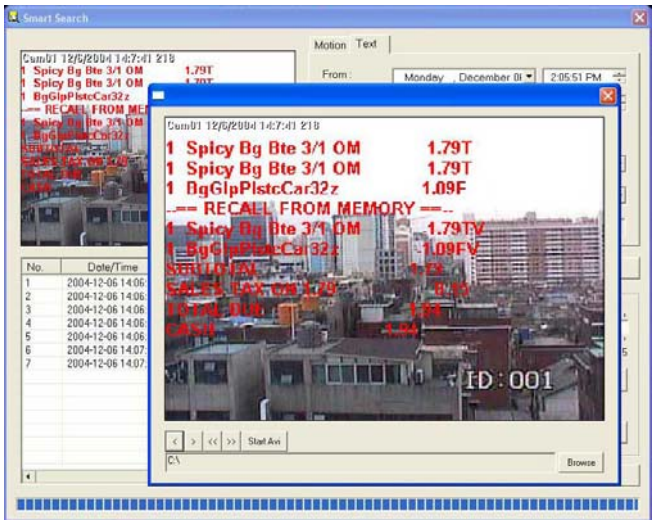
- Choose date, time and camera number to search.
- Select device.
- items: No condition – This will search every data that has been appeared in the time period.

  Any match string – User can compose a string (in condition) to compare and search data text.

  * Event string – when event string has been registered in Device Setup, the event string appears in items



Double click on one of searched result will bring a pop-up window as following picture.



The size of pop-up window is adjustable to feed the demand of larger viewing. Click on one of four corners to enlarge or shrink the picture.

This pop-up window allows play by frame, playback, and AVI saving.

6.Features of DVR-Net

- **Support of TCP/IP Protocol (PSTN, ISDN, ADSL, etc.)**

  Use any of the communication protocols to log on to DVR.

- **Real-time Monitoring**

  Log on DVR-Net to monitor real time DVR images.

- **Searching and Recording DVR data**

  Search recorded data in DVR, and save it in the remote site.

- **Two-way Voice Communications**

  DVR-Net allows users to receive and send audio to DVR.

- **PAN/TILT/ZOOM/FOCUS remote control**

  Control PTZ cameras remotely by DVR-Net.

- **Change DVR Settings Remotely**

  DVR-Net enables users to turn on/off cameras, change recording schedules, and reset sensors

- **'Notify'(Automatic message alert from DVR)**

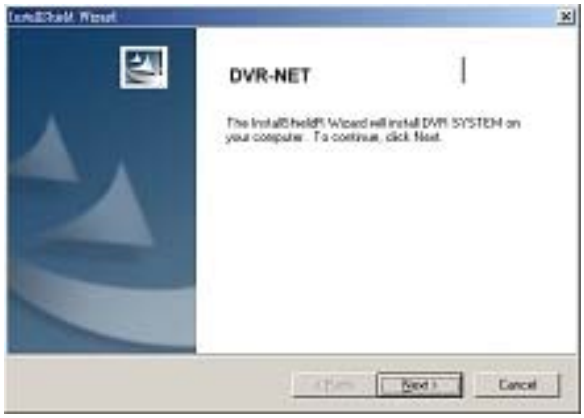
  DVR-Net is automatically started upon a DVR event, motion detected or an alarm triggered.

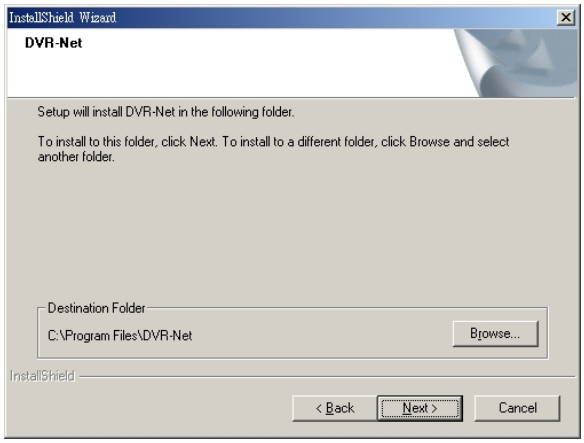
- **Compatible O.S**

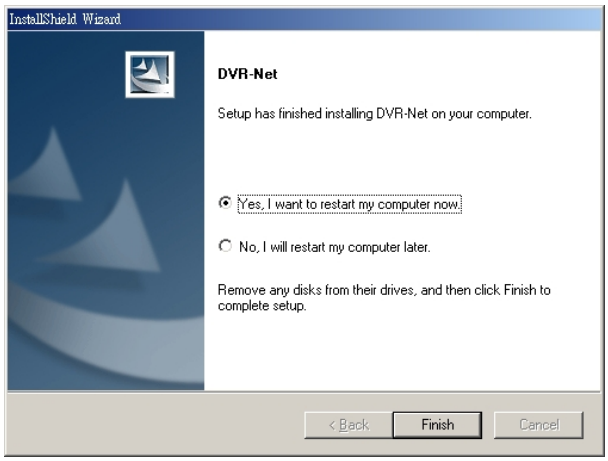
  Windows 2000/XP systems.

7. Installation of DVR-Net

Click on 'setup.exe' and follow the messages.




InstallShield Wizard
DVR-Net
Setup will install DVR-Net in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\DVR-Net
Browse...
InstallShield
< Back
Next >
Cancel


InstallShield Wizard
DVR-Net
Setup has finished installing DVR-Net on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish
Cancel

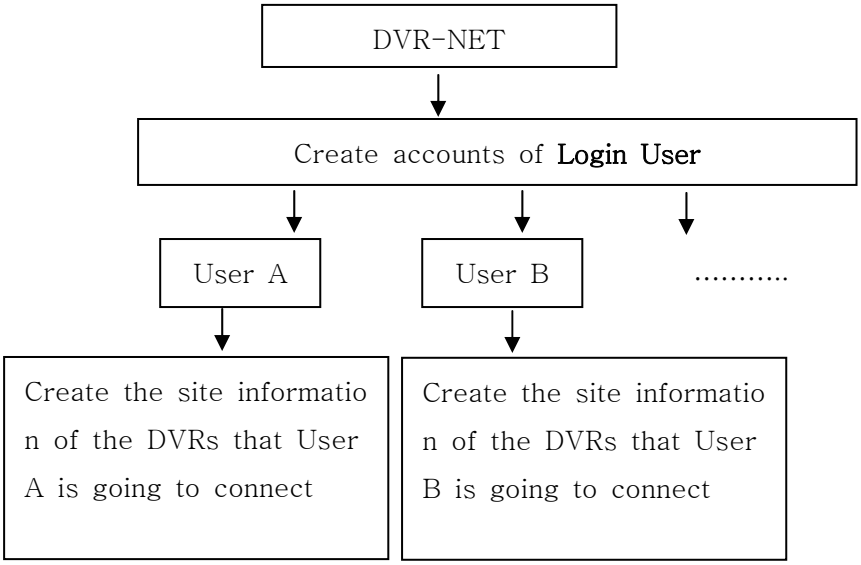
You Need to restart computer

It shows at desktop after the installation is completed.

8. DVR-Net

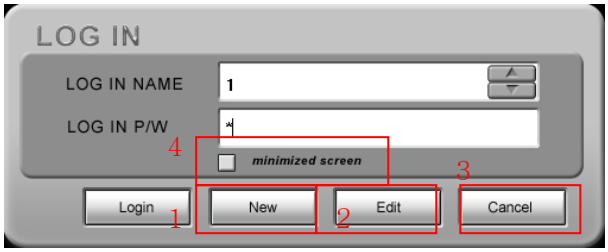
8-1 DVR Login Configuration:

8-1-1 How it works


DVR-NET
Create accounts of Login User
User A
User B
.....
Create the site information of the DVRs that User A is going to connect
Create the site information of the DVRs that User B is going to connect

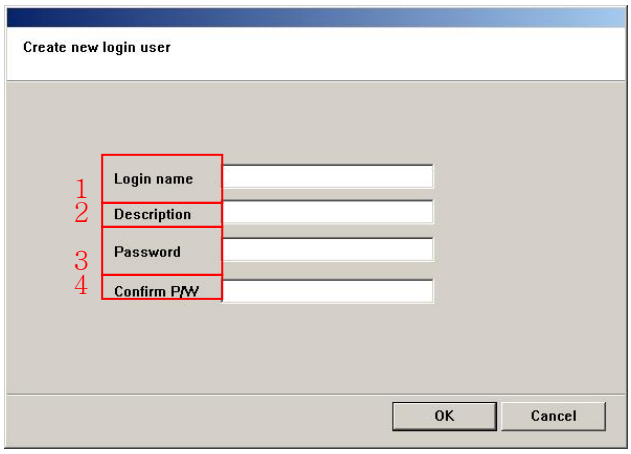
8-1-2 First Time Setting

- **Step 1**: Run DVR-Net and it pops out the following log-In window.
- **Step 2**: Select **New**



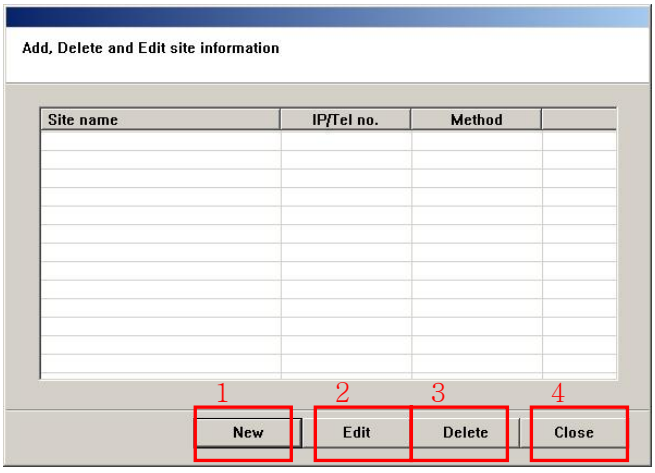
1. **New :** Add a new log-in user and create DVR sites under this user name
2. **Edit :** Edit the DVR site configuration
3. **Cancel :** Exit without change
4. **Minimized screen :** Minimized the screen of system

- **Step 3: Input the user information:** this is to set up the information of users that log in to the DVR-Net



1. Login name : Create an account of the Login User
2. Description : Describe the user.
3. Password : Assign a password to the user
4. Confirm P/W : Re-type the password

- **Step 4: Click OK to continue "Register site information" :** **click New** to register the site information of the DVR that is going to be connected.

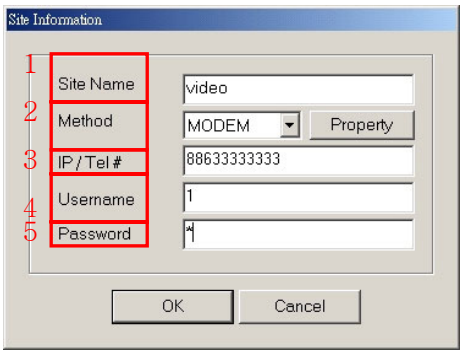


1. New : Create a new DVR site .
2. Edit : Edit a site.
3. Delete : Delete a site.
4. Close : Save and Exit.

Note :

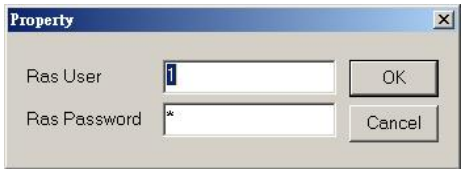
1. Site names are not allowed to be repeated.
2. Do not edit or delete any site while DVR-Net is running.

Step 5: Register site information, and click "OK" to save the settings.



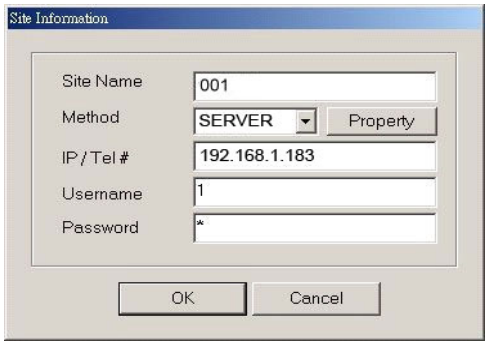
1. **Site name :** Create a site name.
2. **Method :** Select "TCP/IP" for LAN, Cable Modem, ADSL
   Select "Modem" for PSTN Modem
   Select "Server" for use IP Server.
3. **IP/Tel no. :** Input the IP address or telephone number (for PSTN/modem) of DVR
4. **User name :** Key-in the user ID that allows "Network Access" in your DVR "User Admin" list
5. **Password :** Input the password of this ID

Connection by Modem, select method to Modem,click "property " and type the contents at dialogue box of "Ras User" and "Ras Password" like figures,depending upon OS types; Window98 or Windows2000 / XP.



If the DVR's OS. is Windows9x, You should not specify anything in dialogue box of "Ras User " and "Ras Password" .
If the DVR's OS. Windows2000/XP, You should specify anything in dialogue box of "Ras User " and "Ras Password"

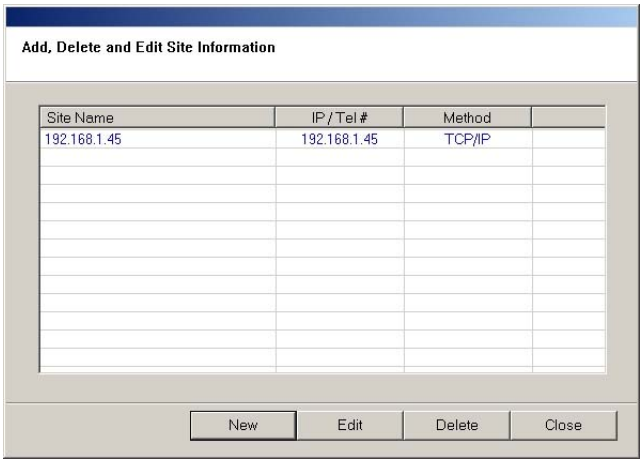
Connection by IP Server, the Site Name will be the DVR's code number which you want to connect.



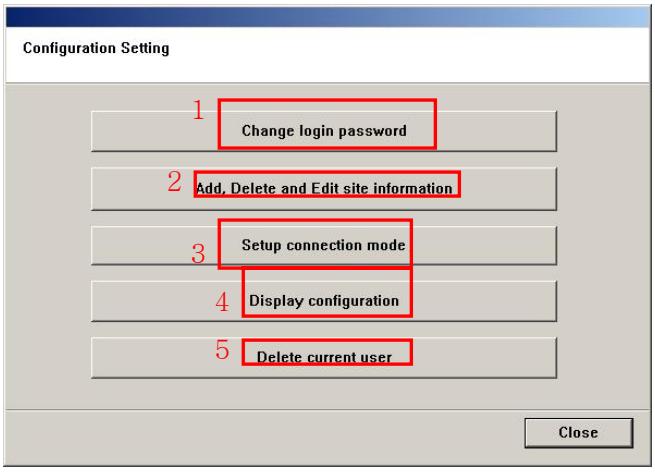
Note

This "Site Name" must be exactly same with the code set in the DVR

- **Step 6: To re-edit or to delete the sites you just created:** select the site and click Edit/Delete to re-edit/delete the site.
- **Step 7: Repeat step 5 and 6 to create another new site.**



- **Step 8: Click "Close" to save settings and continue.**
- **Step 9: Click "Setup connecting mode"**



1. Change login password : change DVR-NET users' passwords.

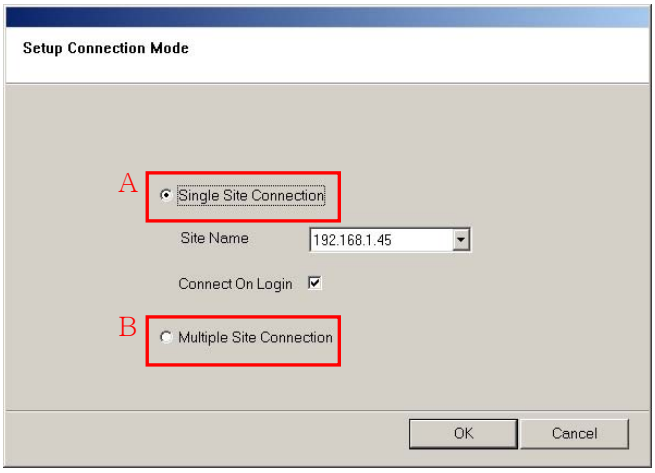
2. Add, Delete and edit site information: register site information.

3. Setup connecting mode: set the connection mode, Single site or Multi sites.

4. Display configuration: setup the initial display screen, assign a directory to save data and a file name to save system log, and setup whether and when to display caption.

5. Delete current user:

Step 10: Setup "Setup connecting mode": Select Single or Multiple, and check Initial Connect for broadband users.

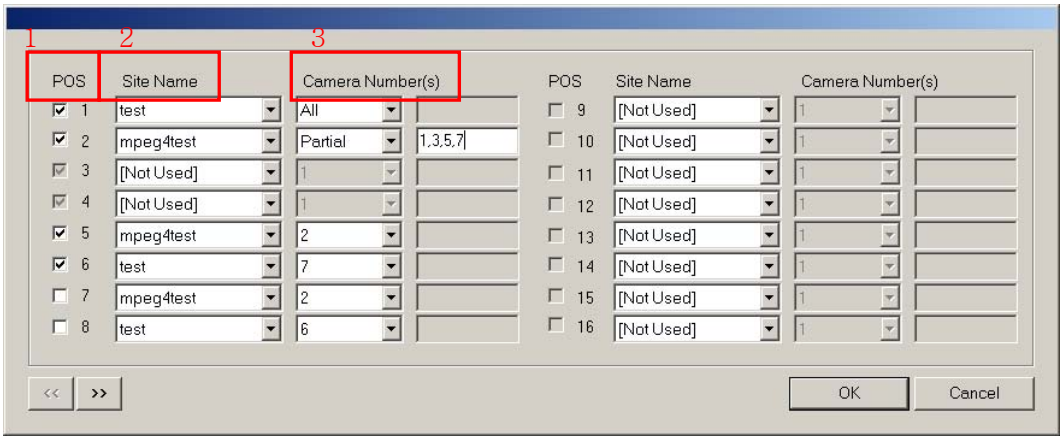


A- Single site connect: When there is only one DVR site to be connect and check "**Initial Connect**"

- When **Initial connect** Checked – suggest to check the box for broadband users
  DVR-NET transmits video of all cameras automatically
- When **Initial connect** Unchecked – Users have to click the camera button manually to start video transmission

B- Multiple site connect: When there are more than one DVR site to be connected

** The following picture is just an example. Please enter correct site information.



1. Pos(Position): The channel number of DVR-NET.

2. Site name : Select the site to be connected.

** Not Used: if no site to be connected in this channel

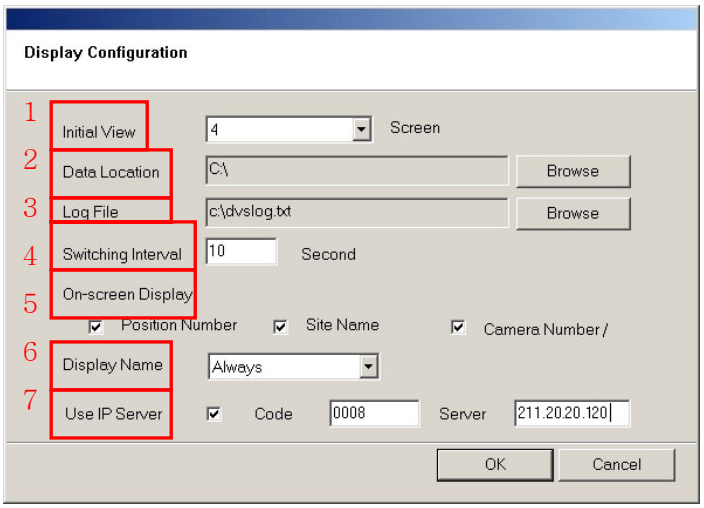
3. Camera number(s) :

Choose the Camera Number of that DVR that you want to monitor in DVR-NET.

All: Show all cameras of that DVR site in this Position.

Partial: Display each camera auto-sequentially in the order you put down in this column. **You can set switch interval in the following step.**

- **Step 10: Setup "Display configuartion":** Choose an initial screen, assign a Save Directory and create the log file name.



1. **Initial view:** Set the initial screen as full screen, quad screen, or other split mode, when DVR-NET starts to run. There are 1, 4, 6, 9, 10, and 16 split mode to choose from.
2. **Data location**: It makes a set up of directory to be stored when clicks "Save" under accessing to DVR-Net.
3. **Log file:** Create a file name to save system activity log.
4. **Switching interval:** Input the seconds of the switching interval.
5. **On screen display**: Image position No, site name, camera No/Name, can be set-up in this mode.
6. **Display Name:** Choose when and whether to display the above information.
   - **Always**: Show caption all the time.
   - **Only Mouse On:** Show caption only when the mouse is moved to a certain channel.
7. **Use IP Server**: Check if IP SEVER shall be used.

   - **Code**: Type the Code which was input at 'IP/Num(Code)'when setting of 'Remote notification of events' at DVR System.

   Note:

   1. Code no. shall be made with mix of alphabetic and numeric letter. Also it discerns capital and small letter.
   2. Do not confuse "Code" of 'Use IP Server' in Network setting of System configuration in DVR system.

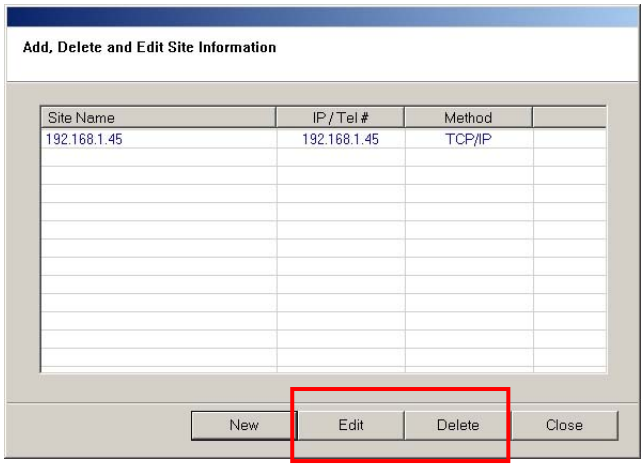
   - **Server**: Address of IP Server

- **Step 10: Click "OK" to finish and close the configuration setting.**
- **Step 11: Log In: Input your DVR-NET ID/PSW and click Login.**

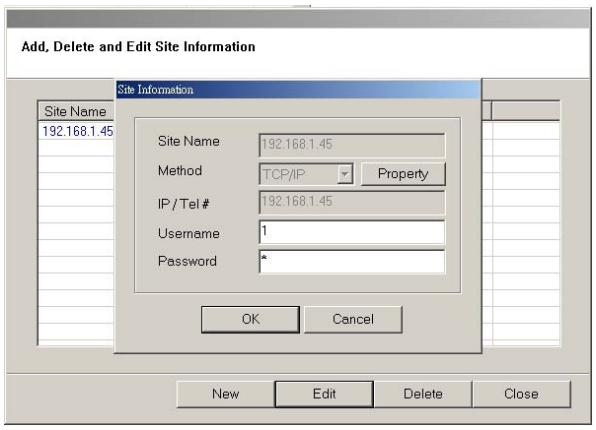
8-1-3 Re-Edit Site Information

- **Step 1: Input your DVR-NET ID/PSW and then click Edit.**

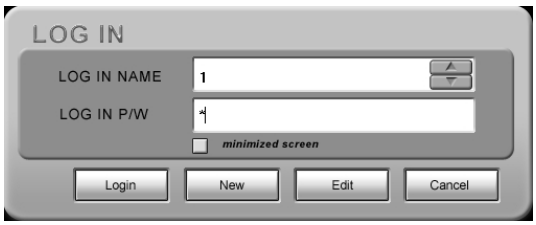
- **Step 2: Select the site you want to edit/delet and click Edit/Delete to re-edit/delete the site.**



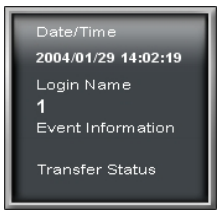
- **Step 3: Click OK to finish editting.**

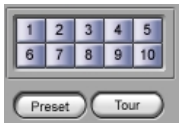
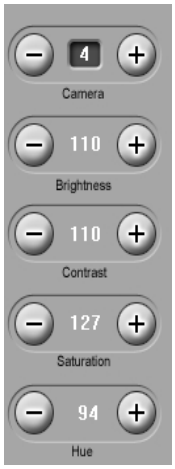


8-2 Accessing DVR-Net



Please put “name & password” and click “Login”

A		It is for **login** and **logout** t o DVR-Net
B		-**Date/Time**: Present time and date indicated in the system. -**Login name**: It says the registered User ID to be used in log-in - **Event Information**: It can notify when an event (Motion detection or Sensor activation) happens in DVR.
C		It configure the information for log-in of DVR-Net
D		Save the images being transferred. (Search through the saved data on Local Search)
F		Switching panel of Camera control (Pan/Tile/Zoom) and Image control and Compression Rate.

		Preset point and Preset, Tour function
P		PTZ camera function and direction button.
T Z		Buttons of the COMPRESSION RATE menu appear as the "COMP Rate" button is pressed. Choose HIGH SPEED to increase the rate of data transfer but decrease the image quality. Choose LOW SPEED to do the opposite.
G		End DVR-Net
H		Local Search - Search through data saved on the DVR-Net system
I		Remote Search - Search through data saved on DVR, and save the data on the current computer
J		User settings Change the settings of the DVR through DVR-Net.
K		Enable voice communications with DVR. ("Sound Recording" on the DVR User settings menu must be set on) Send Voice / Receive Voice / Send and receive voice / cancel.

L

While connecting to DVR-Net, if you point out the upper channel small box by mouse, the connected site information such as IP address (Tel No), camera Number, validity of connection. So it's very easy to know who are connecting. Also, when pressing upper box of camera, if it turns to apricot color button pressed, it means it is connected. Otherwise, it means the connection is not valid

M

Relay state, you can turn it on or off manual.

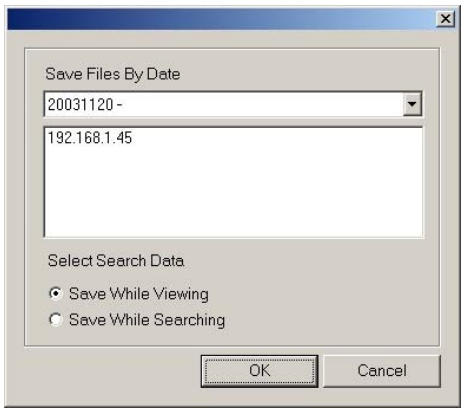
N

Click the number button to turn on and off the corresponding relay from DVR-NET

8-3 Local Search

Its feature makes it possible to search the recorded data in DVR-Net.

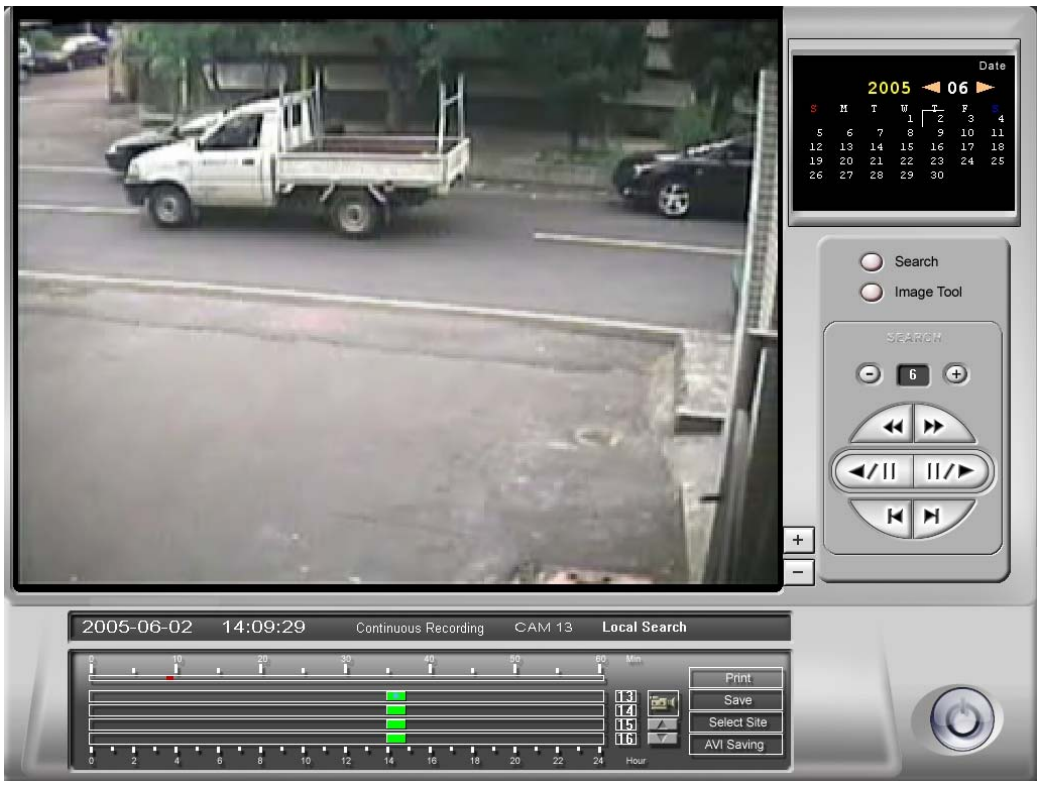
On screen, if you press the button like a left-handed Icon, following box pops up



The name of system where the data recorded, are shown in lists. So, selecting the system which wish to be searched in and check the option of “Saved while viewing” or “Save while searching” and press “OK” as final.

Saved while viewing – It can make it recorded while watch the screen connected to DVR.

Saved while searching – It can make it recorded at DVR-Net while searching the recorded data in -DVR.

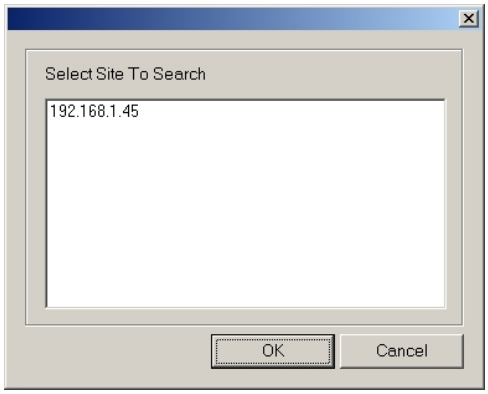


Most of operator is similarity *Search* program

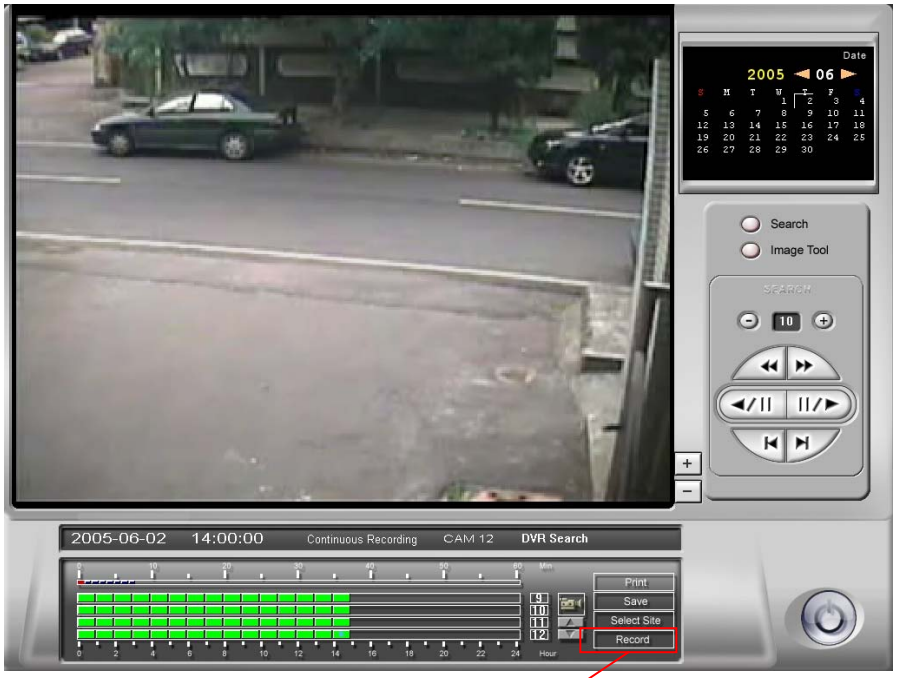
8-4 Remote Search

To search the recorded data in DVR by DVR-Net.

If pressing the button likes left-handed Icon, picture box like followings, will be shown.



After selected the site name, click “OK”, then following screen pops up.



Save the images being transferred as .DAT file.

The data saved by “Record” can be searched by “Local Search”

NOTE :

Local Search and Remote Search cann’t Play sound

8-5 Remote Setup

It is possible to configure the DVR while presently connected with DVR-Net

: Press the left handed Icon on screen.

< Ref > : Please refer to the further detail procedure of configurations.

8-6 Notification of event happening

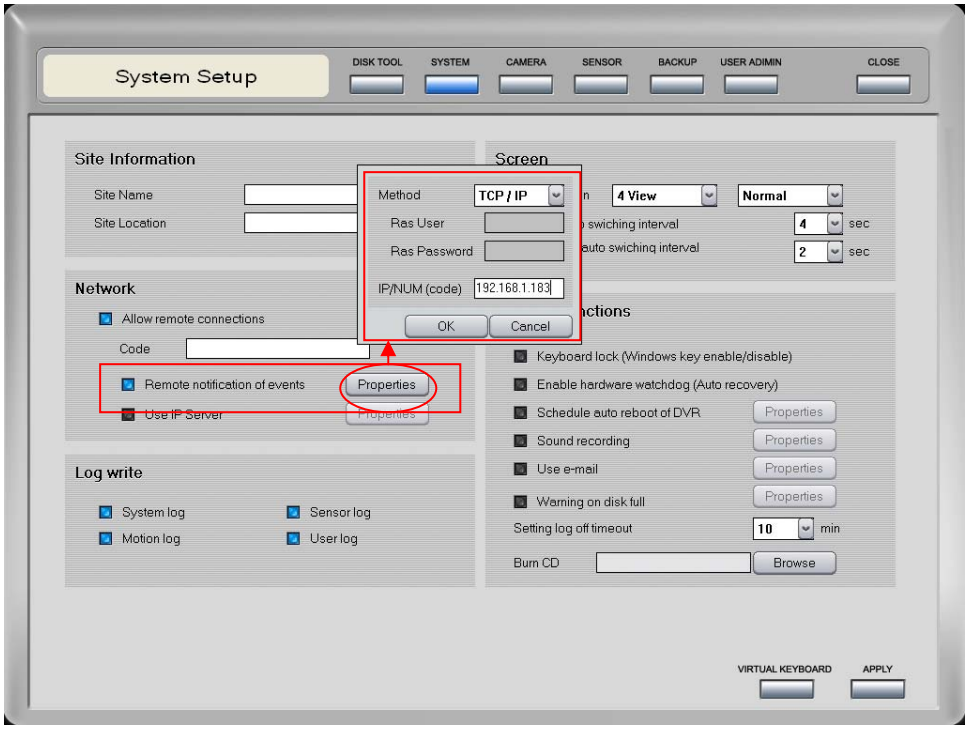
This feature is that event happening such as motion detection and sensor activation may be notified to DVR-Net on real time.

The method of using this feature is as follows.

By press the Icon like left-handed picture, you can configure the system set-up of DVR at remote location

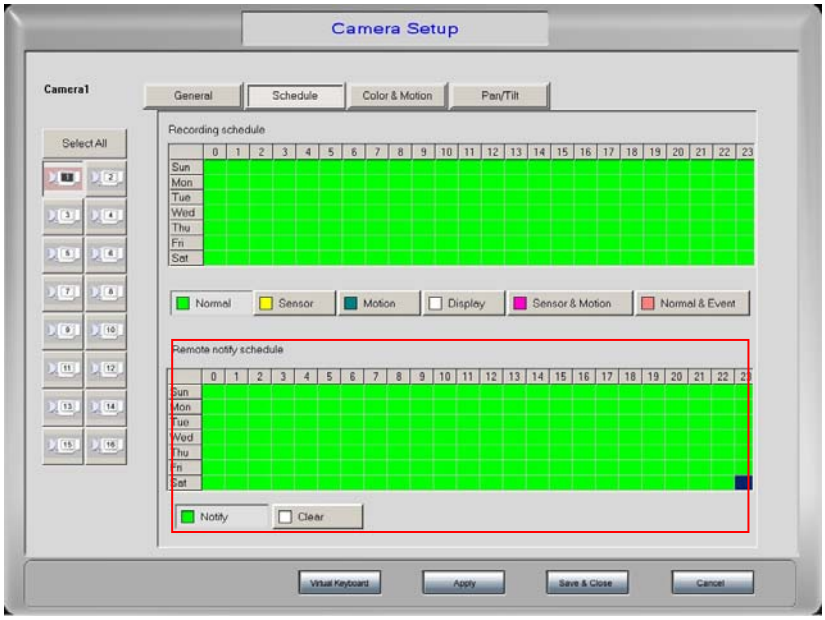
.

Select "**Remote notification of events**"→**Properties,**



At system setup, check “Notify remote site of any Events” on network and input the method of access by TCP/IP or Modem in a line with IP address or Telephone No.

Next, it is required to set “Notify scheduling” on selected day of week in “Scheduling” of “Camera setting”.



It is easy to find out at what channel the event happens because the channel has specially image boundary with red colors-line.

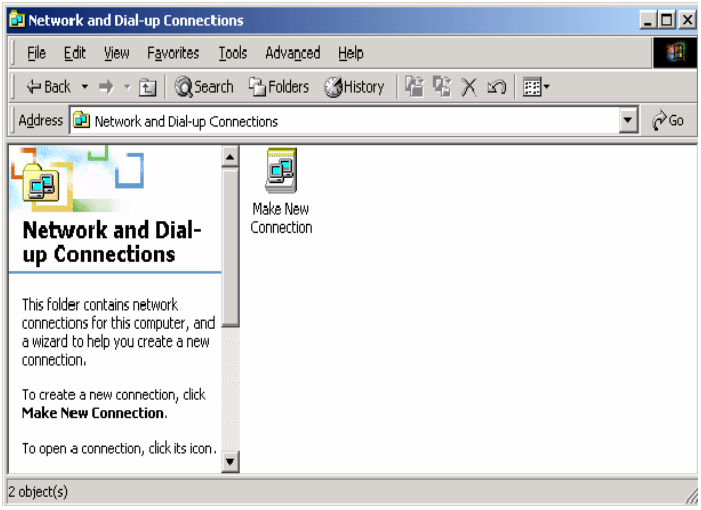
9. Setup the Dial-Up Server

Attention: Before you start to setup it, please make sure that the Modem spec. is with the "**Accept incoming connection"**.

To connect to DVR using a modem, a Dial-Up Server must be installed on the DVR. To connect by using a modem, both of the DVR and DVR-Net must be equipped with a modem. To connect with an IP address Both of the systems must have an IP address.

9-1 For Window2000

Click Start > Setup > Control panel > Network and Dialup Connection and you can see follow screen.

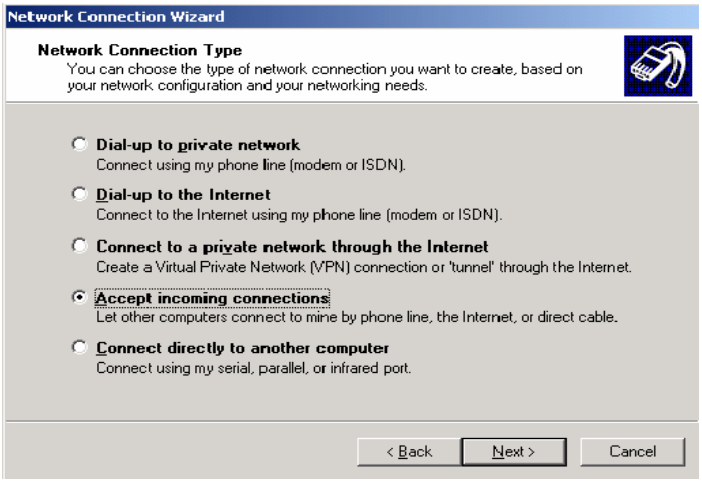

Network and Dial-up Connections
File Edit View Favorites Tools Advanced Help
Back Search Folders History
Address Network and Dial-up Connections
Go
Make New Connection
Network and Dial-up Connections
This folder contains network connections for this computer, and a wizard to help you create a new connection.
To create a new connection, click Make New Connection.
To open a connection, click its icon.
2 object(s)

Click 'Make New Connection' , then follow screen comes.

Network Connection Wizard
Welcome to the Network Connection Wizard
Using this wizard you can create a connection to other computers and networks, enabling applications such as e-mail, Web browsing, file sharing, and printing.
To continue, click Next.
< Back
Next >
Cancel

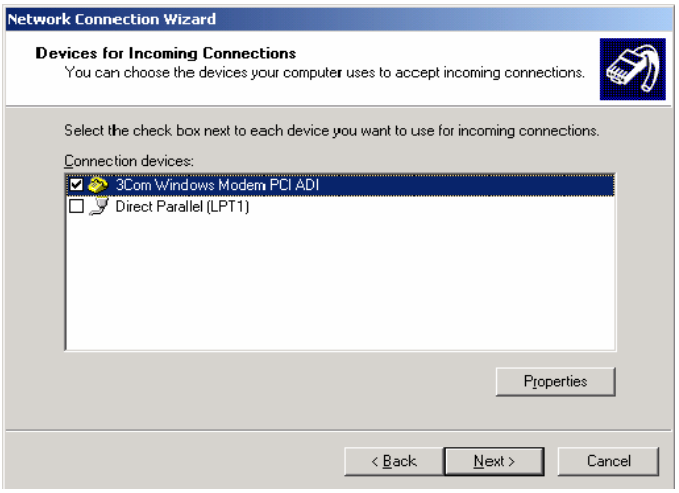
Click 'Next'.

Select 'Accept Incoming Connections' and Click 'Next'

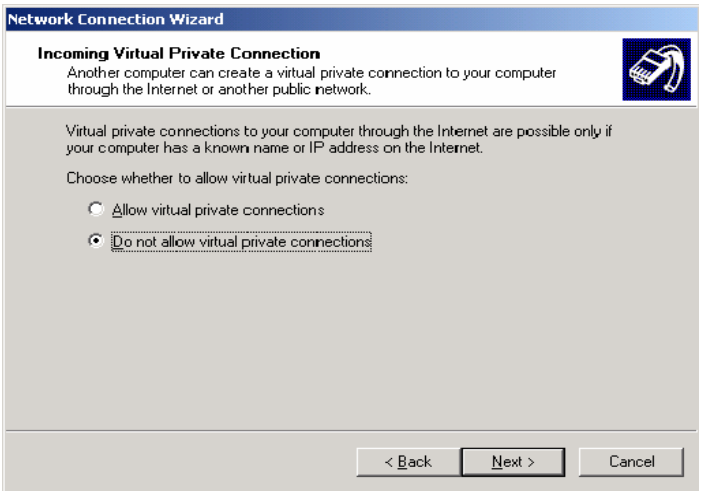

Network Connection Wizard
Network Connection Type
You can choose the type of network connection you want to create, based on your network configuration and your networking needs.
Dial-up to private network
Connect using my phone line (modem or ISDN).
Dial-up to the Internet
Connect to the Internet using my phone line (modem or ISDN).
Connect to a private network through the Internet
Create a Virtual Private Network (VPN) connection or 'tunnel' through the Internet.
Accept incoming connections
Let other computers connect to mine by phone line, the Internet, or direct cable.
Connect directly to another computer
Connect using my serial, parallel, or infrared port.
< Back
Next >
Cancel

Selecting the proper modem on modem list, Click ‘Next’

(Following picture is sample for selecting “3Com” Modem.)

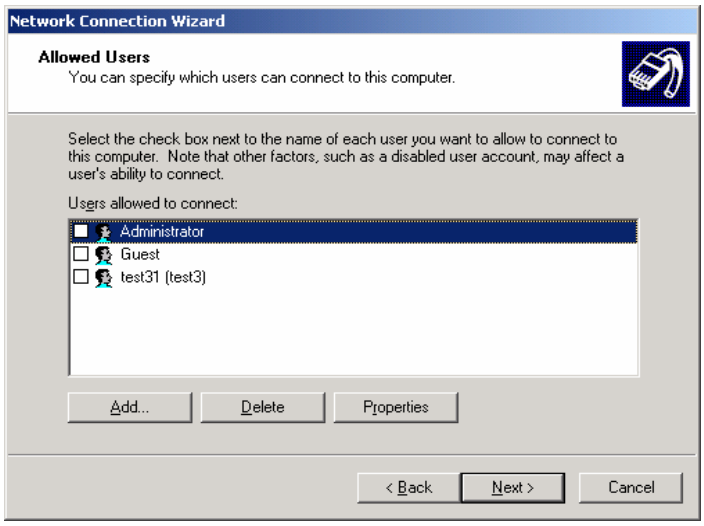

Network Connection Wizard
Devices for Incoming Connections
You can choose the devices your computer uses to accept incoming connections.
Select the check box next to each device you want to use for incoming connections.
Connection devices:
3Com Windows Modem PCI ADI
Direct Parallel (LPT1)
Properties
< Back
Next >
Cancel

Select ‘Do not allow virtual private connections’ and Click ‘Next’.

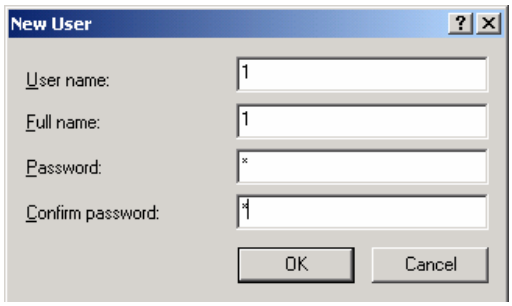

Network Connection Wizard
Incoming Virtual Private Connection
Another computer can create a virtual private connection to your computer through the Internet or another public network.
Virtual private connections to your computer through the Internet are possible only if your computer has a known name or IP address on the Internet.
Choose whether to allow virtual private connections:
Allow virtual private connections
Do not allow virtual private connections
< Back
Next >
Cancel

Then, the Screen with ‘Allowed Users’ comes out.

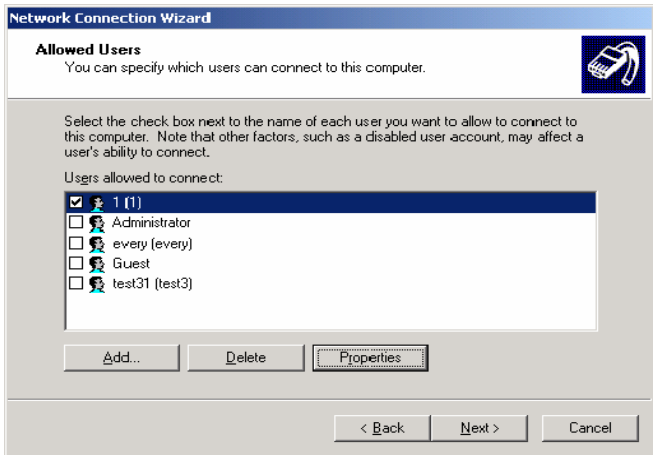
Here, you can add the user from Net viewer allowed to access DVR main. For this process, Click ‘Add…’


Network Connection Wizard
Allowed Users
You can specify which users can connect to this computer.
Select the check box next to the name of each user you want to allow to connect to this computer. Note that other factors, such as a disabled user account, may affect a user's ability to connect.
Users allowed to connect:
Administrator
Guest
test31 (test3)
Add...
Delete
Properties
< Back
Next >
Cancel

And now, Fill in the names of added were and password. Press ‘OK’.

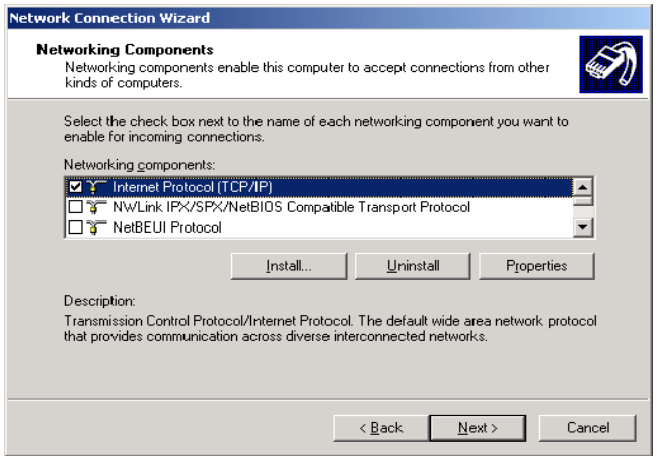


When you finish to input user “1” to be accessed, then those allowed users are shown with ‘user 1’ currently input for example.


Network Connection Wizard
Allowed Users
You can specify which users can connect to this computer.
Select the check box next to the name of each user you want to allow to connect to this computer. Note that other factors, such as a disabled user account, may affect a user's ability to connect.
Users allowed to connect:
1 (1)
Administrator
every (every)
Guest
test31 (test3)
Add...
Delete
Properties
< Back
Next >
Cancel

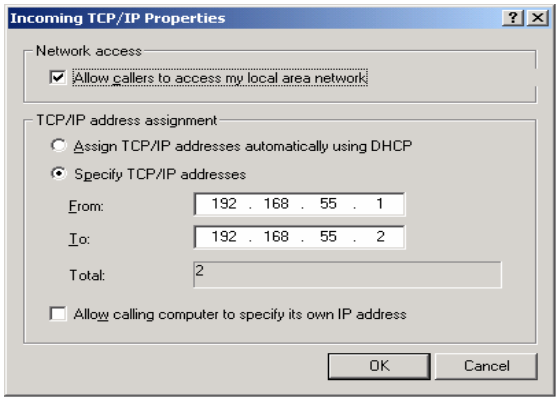
And now, Click ‘Next’.

Checking “Internet Protocol TCP/IP” and Press ‘Properties’.


Network Connection Wizard
Networking Components
Networking components enable this computer to accept connections from other kinds of computers.
Select the check box next to the name of each networking component you want to enable for incoming connections.
Networking components:
Internet Protocol (TCP/IP)
NWLink IPX/SPX/NetBIOS Compatible Transport Protocol
NetBEUI Protocol
Install...
Uninstall
Properties
Description:
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
< Back
Next >
Cancel

Checking “Allow callers to access my local area network” and In TCP/IP address assignment, check “Specify TCP/IP address”

And now, fill the IP No of DVR main in blank of “From” while filling the IP No of Net Viewer in “To”.


Incoming TCP/IP Properties
Network access
Allow callers to access my local area network
TCP/IP address assignment
Assign TCP/IP addresses automatically using DHCP
Specify TCP/IP addresses
From: 192 . 168 . 55 . 1
To: 192 . 168 . 55 . 2
Total: 2
Allow calling computer to specify its own IP address
OK
Cancel

Note: Because of Windows, the IP address must be 192.168.55.1*, Otherwise it can’t be connection.*

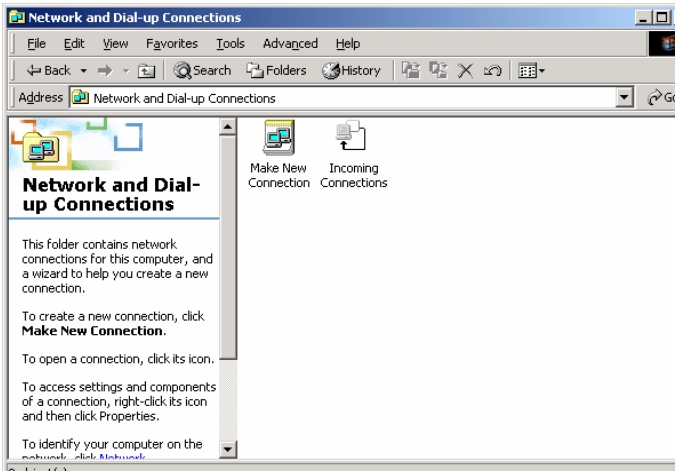
Designating TCP/IP add, Click ‘OK’ and ‘Next’ on following screen.

Then you can see following screen “Completing the Network Connection Wizard”.

Here, you can specify the connection name are you want and Click ‘Finish’.

Network Connection Wizard
Completing the Network Connection Wizard
The connection will be named:
Incoming Connections
To create this connection and save it in the Network and Dial-up Connections folder, click Finish.
To edit this connection in the Network and Dial-up Connections folder, select it, click File, and then click Properties.
< Back
Finish
Cancel

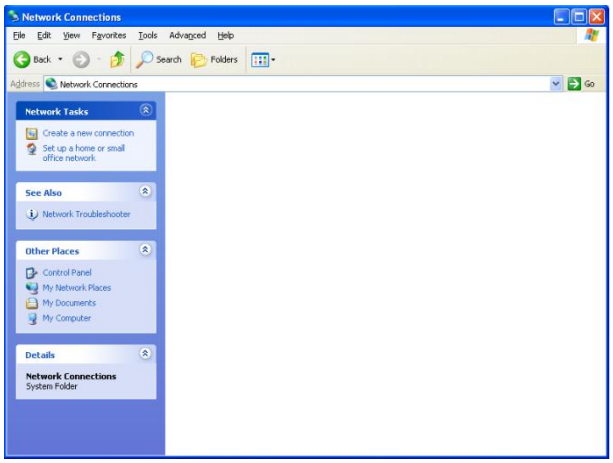
Now, you can see that Icon you have configured up to now, on following screen.


Network and Dial-up Connections
File Edit View Favorites Tools Advanced Help
Back Search Folders History
Address Network and Dial-up Connections
Make New Connection
Incoming Connections
Network and Dial-up Connections
This folder contains network connections for this computer, and a wizard to help you create a new connection.
To create a new connection, click Make New Connection.
To open a connection, click its icon.
To access settings and components of a connection, right-click its icon and then click Properties.
To identify your computer on the

These procedures are described for installing dialup network server, only. So, the procedures for accessing network viewer shall be referred to the related previous article.

9-2. For Windows XP

Click Start > Setup > Control panel > Network Connection and then you can see follow screen.



New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
Connect to the Internet.
Connect to a private network, such as your workplace network.
Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

Select “”Create a new connection” Click ‘Next’.

New Connection Wizard
Network Connection Type
What do you want to do?
Connect to the Internet
Connect to the Internet so you can browse the Web and read email.
Connect to the network at my workplace
Connect to a business network (using dial-up or VPN) so you can work from home, a field office, or another location.
Set up a home or small office network
Connect to an existing home or small office network or set up a new one.
Set up an advanced connection
Connect directly to another computer using your serial, parallel, or infrared port, or set up this computer so that other computers can connect to it.
< Back
Next >
Cancel

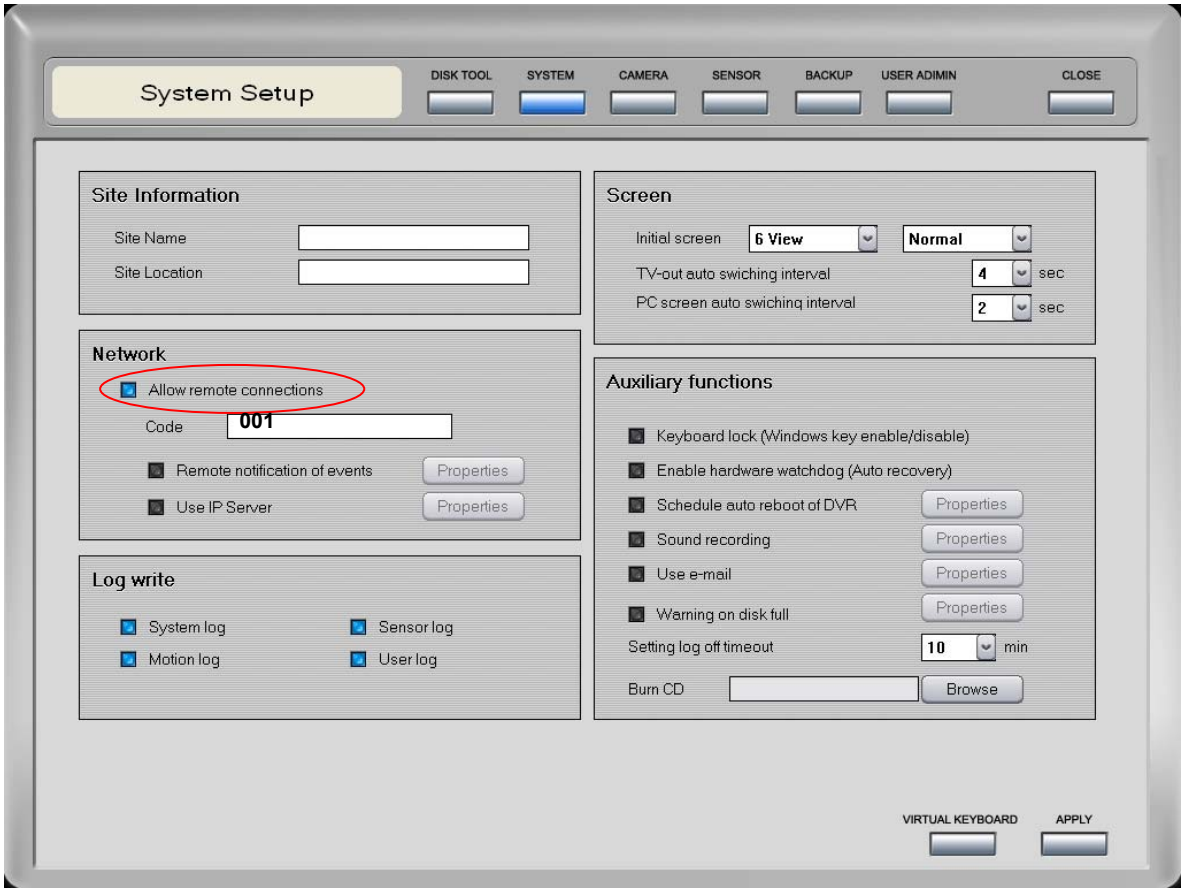
New Connection Wizard
Advanced Connection Options
Which type of connection do you want to set up?
Select the connection type you want:
Accept incoming connections
Allow other computers to connect to this computer through the Internet, a phone line, or a direct cable connection.
Connect directly to another computer
Connect to another computer using your serial, parallel, or infrared port.
< Back
Next >
Cancel

Select “Set up an advanced connection” Check “Accept incoming connection” and Click “Next”

Then, the other step as the same with Windows2000

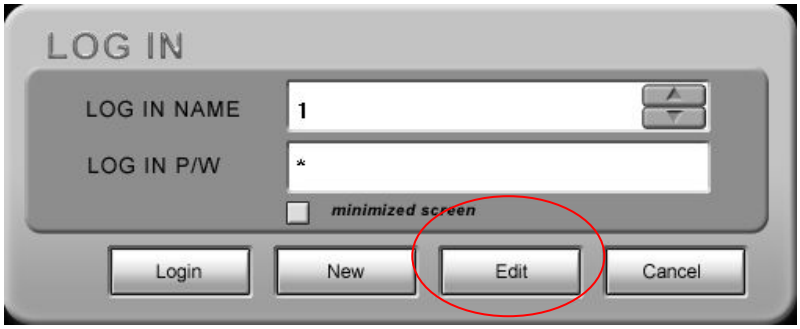
9-3 DVR setting

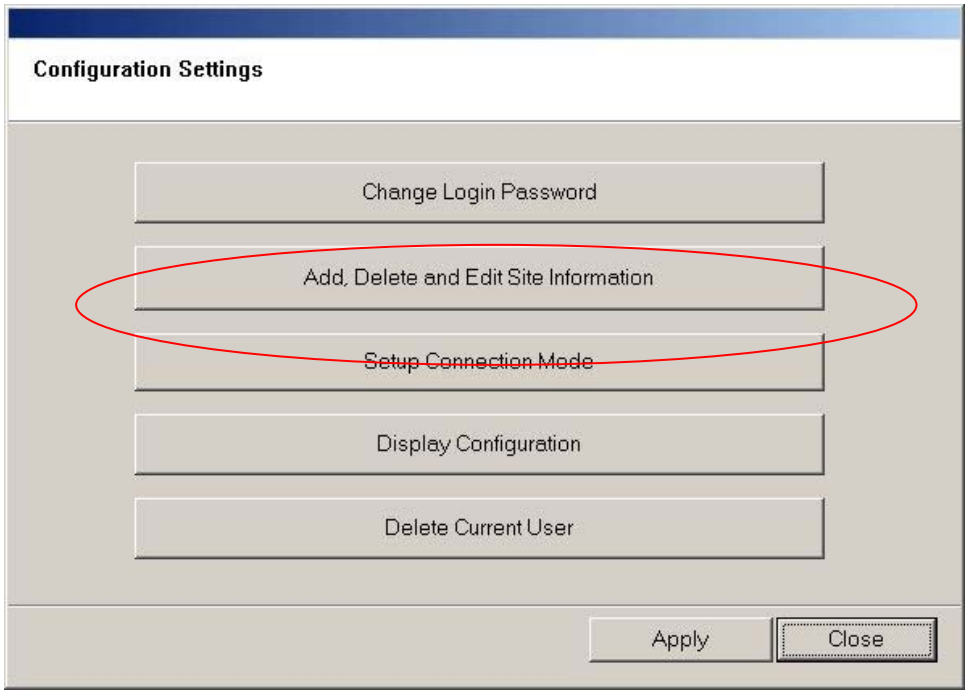
- **A dvr-main setting**

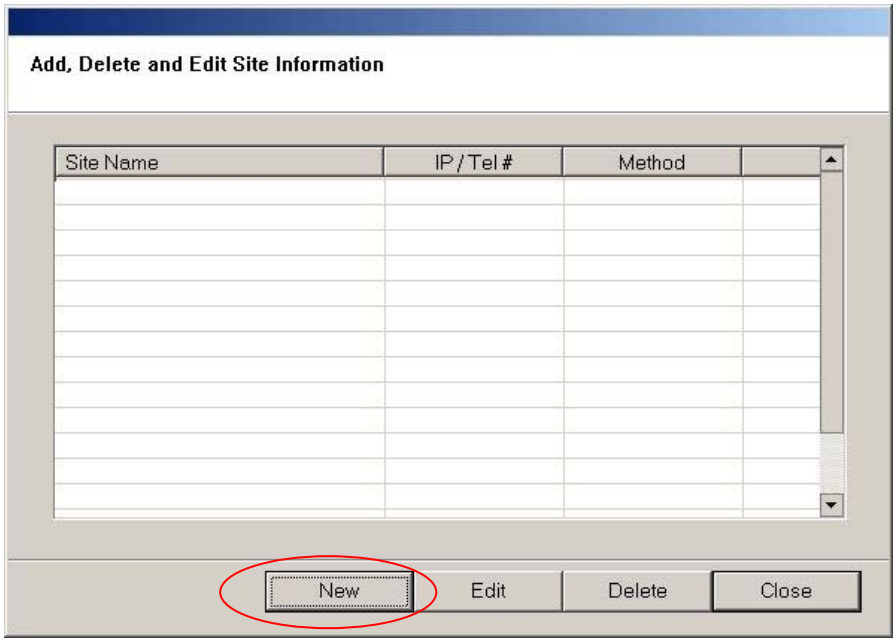


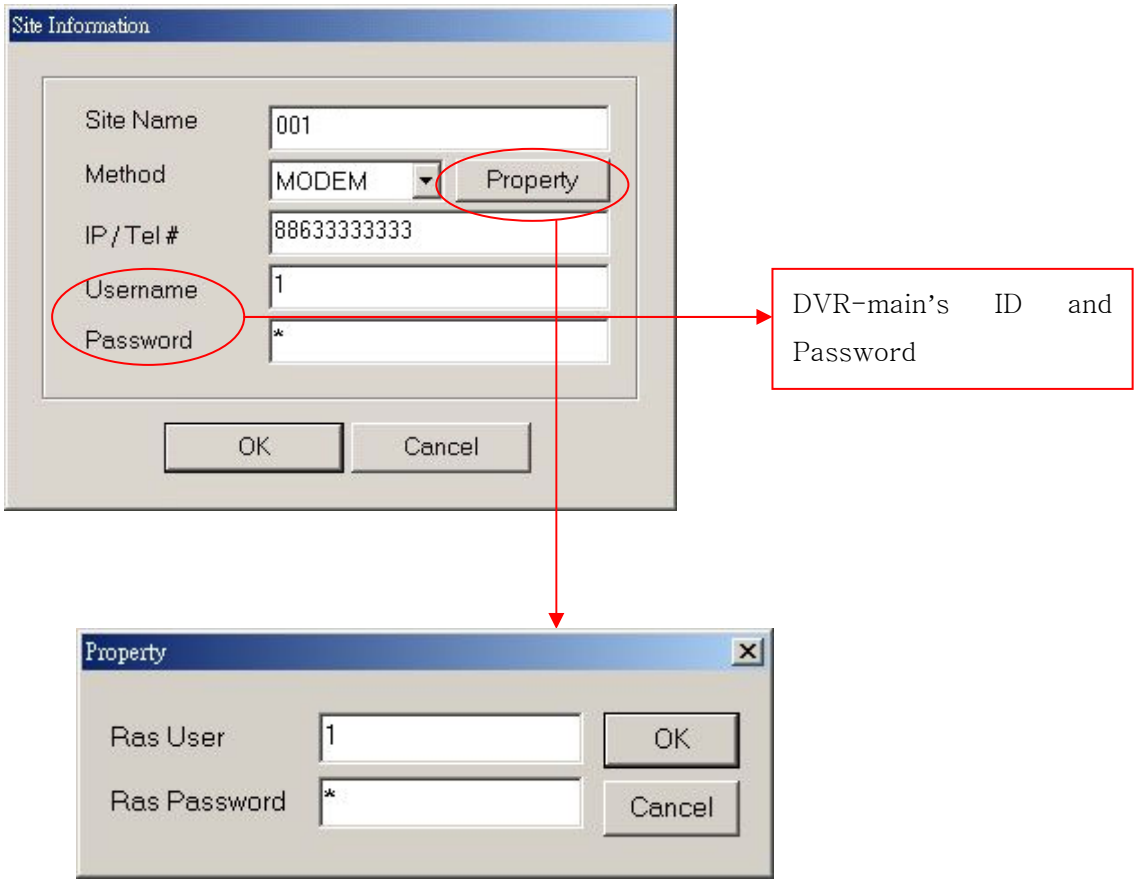
B DVR-NET setting

Execute dvr-net program

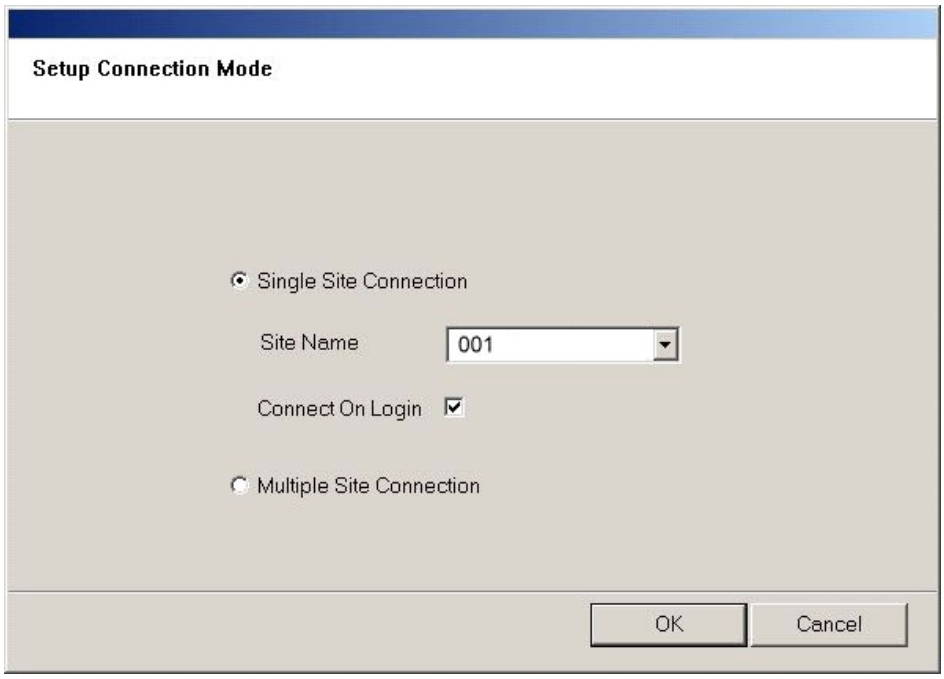



Configuration Settings
Change Login Password
Add, Delete and Edit Site Information
Setup Connection Mode
Display Configuration
Delete Current User
Apply
Close


Add, Delete and Edit Site Information
Site Name
IP / Tel #
Method
New
Edit
Delete
Close

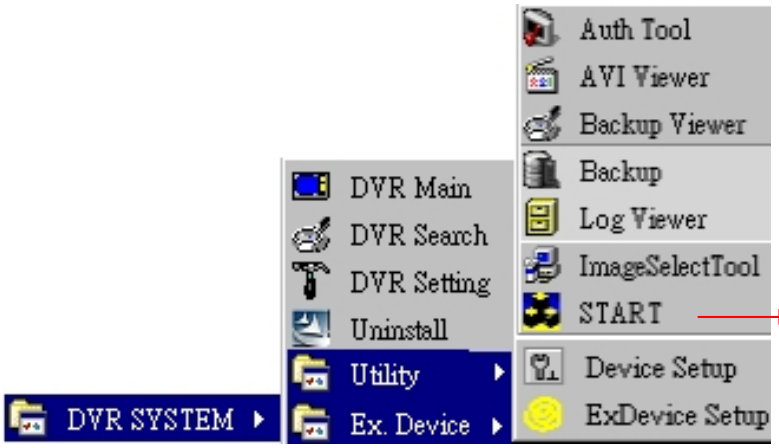


PS.User and password not dvr-main's ID and password, those are dial-up server's user and password.



You can select "Single" or "Multiple" site Connection

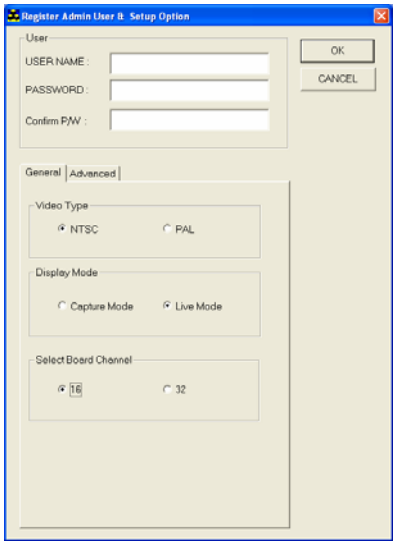
10. DVR Management



Run “START.EXE” , Then check user dialog box will appear

- **USER NAME :** Type Name of Top manager .
- **PASSWORD :** Type Password of Top manager.

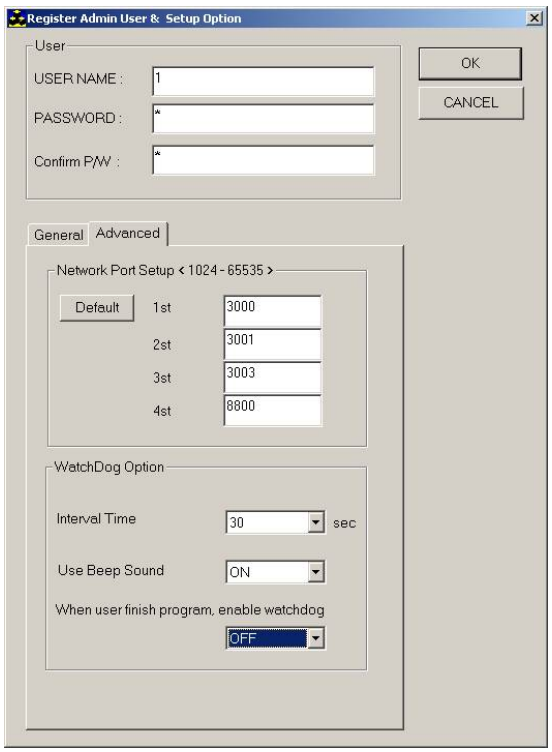
10-1. Basic settings



LIVE CAPTURE board

Note: Only when you change the dvr board can modify it, otherwise, change the setting will Cause the dvr crash.

10-2. Advanced settings



- Network Port Setup

- 1 ST ~ 4 ST : Type the port no. for Network.

1 st : for Image
2 nd: for PTZ and command
3 rd: for Setting
4 th: for sound

- Default : Click Default, Then it sets as default.

- WatchDog Option

- Interval Time: it sets the time of beep sound.
- Use Beep Sound : it allows to go off beep sound by selecting “on”.
- When user finish program: it allows to go off beep sound when program finish to run by selecting “on”.

Upon finishing these configurations, Log-in with the user ID and password of top manager and tap “OK”.

11. User Define PTZ Protocol

For define PTZ protocol, you have to refer PTZ's data sheet, or contact with distributor.

Two file need to check,

One for option file, file location at <windows>\AngelCam.dat

Find [PT_INFO] section, and change the PT_CNT option and new PTZ name.

Other is in <Program Files\DVR System\PT> and make new file as the same with the other.

1. Section List

Section	Description
GENERAL	Settings of Parameter under Communication Backgrounds and Functional D efinition of Pan / Tilt
DATA	Data setting of constant data and reserve data
DATAEX	Camera No., Preset No. and define Speed step
CAMERAEX	Define the extended camera no.
CHECKSUM	Formally define Checksum
SPEED	Define setting of Pan/Tilt, Zoom / Focus, Speed
COMMAND	Define functional Protocol format
COMMAP	Define Mapping Code of Command section Data

2. Section Detail

(1) "GENERAL" section

Key	Description
NAME	Setting of Pan / Tilt Name
SPEED	Setting of Baud rate Available variable) 2400, 4800, 9600, 14400, ...
PARITY	Set of Parity bit Available variable) N (none), O (odd), E (even)
DATABIT	Set of Data bit Available variable) 4, 5, 6, 7, 8
STOPBIT	Set of Stop bit Available variable) 1, 1.5, 2
PRESET	Set of use / not-use of Preset function Available variable) 0 (Not use), 1 (Use)
AUTOSCAN	Set of use / not-use of Auto scan function Available variable) 0 (Not use), 1 (Use)

TOUR	Set of use / not-use of Tour function Available variable) 0 (Not use), 1 (Use)
CAMERAMENU	Set of use / not-use of Camera Menu feature Available variable) 0 (Not use), 1 (Use)

Example)

```
[GENERAL]
NAME = LilinPT
SPEED = 9600   //Use “baud rate 9600 bps”
PARITY = N      //No parity bit
DATABIT = 8
STOPBIT = 1
PRESET = 1      // Use the preset function
AUTOSCAN = 1   // Use auto scan function
TOUR = 1         // Use tour function
CAMERAMENU = 0    // Do not use Camera menu feature
```

(2) DATA section

Key	Description
LEN	Total No. of Data (or Last No.)
DATA[n]	Settings of data (format [No. of byte], [one byte to be shown as 2 digits in hexadecimal] (example In case of express “abc”, DATA1 = 3, 616263 * But, the value start from No. 1

Example)

```
[DATA]
LEN = 2
DATA1 = 1, 30   //‘0’
DATA2 = 4, 61626364 // ’abcd’
```

(3) DATAEX section

Key	Description
CAMERA	Define Camera No. - format [*No. of byte*], [*one byte to be shown as 2 digits in hexadecimal*], ... * Up to 16 as maximum, Settings are available.
PRESET	Define the Preset No. - format [*No. of byte*],[*one byte to be shown as 2 digits in hexadecimal*], ... * Up to 10 as maximum, Settings are available
PTSPEED	Setting of basics and No. of Pan/Tilt Speed Step - format [Total No. of step], [No. of basic step] * No. of step area integer and ranged from 1.And No. of basic step can never be more than No. of total step.
FZSPEED	Setting of No. of Zoom/Focus Speed step and basic step * same as setting of PTSPEED
APSPEED	Setting of No. of Auto Pan Speed step and Basic step. * same as setting of PTSPEED
PSSPEED	Setting of No. of Preset Speed step and basic step. * same as setting of PTSPEED

Example)

```
[DATAEX]
CAMERA = 1, 31, 32, 33, 34, 35, 36, 37, 38, 39, 3A, 3B, 3C, 3D, 3E, 3F, 40    //Camera No. of #1 is  0x31 and that of #16 is 0x40
PRESET = 1, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A
PTSPEED = 7, 4 // Use step 4 among total 7 steps of speed level
FZSPEED = 7, 4
APSPEED = 7, 3
PSSPEED = 20, 10
```

(4) CAMERAEX section

Key	Description
LEN	Total No. of data (or last No.)
CAMERA[n]	Define Camera No. ▪ format [No. of *byte*],[*one byte to be shown as 2 digits in hexadecimal*], ... * Spread out up to 16 as maximum

Example)

```
[CAMERAEX]
LEN = 2
CAMERA1 = 1, 41, 42, 43, 44, 45, 46, 47, 48, 49, 4A, 4B, 4C, 4D, 4E, 4F, 50
CAMERA2 = 1, 81, 82, 83, 84, 85, 86, 87, 88, 89, 8A, 8B, 8C, 8D, 8E, 8F, 90
```

(5) CHECKSUM section

Key	Description
LEN	Total No. of step (or Last No.)
CHECK[n]	Formal Definition of Checksum ▪ format [*data index*], [No. of *byte*], [*operation*], [(1)*additional value*], [(2)*operation*], ... (repeat (1) ~ (2)) * data index are calculated from 0 * additional value - 0 : when Single calculation is applied. * operation value - -1 : no - 0 : = - 1 : + - 2 : - - 3 : * - 4 : / - 5 : ^ (exclusive or) - 6 : ~ (not) - 7 : | (bit or) - 8 : & (bit and)

Example)

```
[CHECKSUM]
LEN=2
CHECK1 = 0, 7, 1          // add 7 bytes from 1st data
CHECK2 = 0, 8, 1, 0, 5    // add 8 bytes from 1st data and make that value " exclusive or"
```

(6) SPEED section

Key	Description
LEN	Total No. of data (or last No.)
SPEED[n]	Data Setting per speed step ▪ format [*No. of byte*], [*one byte to be shown as 2 digits in hexadecimal*], ... * Up to 16 step as maximum, Settings are available.

Example)

```
[SPEED]
LEN = 3
SPEED1 = 1, 89, 92, 9B, A4, AD, B6, BF // the value of 1st step is 0x89 and the value of 7th is 0xBF.
SPEED2 = 1, 89, 92, 9B, A4, AD, B6, BF
SPEED3 = 1, 0C, 18, 24, 30, 3C, 48, 54, 60, 6C, 78, 84, 90, 9C, A8, B4, C0, CC, D8, E4, F0
```

(6) COMMAND section

Key	Description
LEN	Total No. of data (or last No.)
CMD[n]	Definition of command data ▪ format [*No. of total byte*], [(1)*data index*], [(2)*No. of byte*], [(3)*data value*], ... (Repeat (1) ~ (3)) * data index start from 0. * data value - $d[n] : use the value defined at DATA section - $c : use camera No. defined at DATAEX section - $c[n] : use camera No. defined at CAMERAEX section

	- $p : use Preset No. defined at DATAEX section - $s[n] : use the defined formula at CHECKSUM section - $s[n]1 : use low bit calculated by relevant formula - $s[n]2 : use high bit calculated by relevant formula - $s[n]3: character value of low bit of value calculated by relevant formula - $s[n]4 : character value of low bit of value calculated by relevant formula - $e[n]1 : p/t speed used the defined value at SPEED section - $e[n]2 : f/z speed used the defined value at SPEED section - $e[n]3 : auto scan speed used the defined value at SPEED section - $e[n]4 : preset speed used the defined value at SPEED section But, n means the index value of key to be used for relevant section ▪ example In case of , CMD1 = 3, 0, 1, $c, 1, 1, 04, 2, 1, $e11 ,No. of total data byte is 3 and 1 byte from 1st index means camera no. 1 byte from 2nd byte stands for 0x04 in hexadecimal. One byte from 3rd byte represents the value of P/T speed, which brings value of SPEED1 key.
CMDS[n]	Index definition of command data to be used for stopping the relevant command. * The Index value means Index defined at COMMAND section.
CMDEX[n]	Definition of Repeat command ▪ format [*timer*], [*command index*], [*repeat count*]

	* timer - setting as values in millisecond - -1 : no use * repeat count - -1 : infinite - 0 : no repeat

Example)

```
[COMMAND]
LEN = 21
CMD1 = 3, 0, 1, $c, 1, 1, 04, 2, 1, $e11
CMDS1 = 14   // Stop command of #1 command is used for the command data of #14.
CMDEX1 = 0, 1, -1 // Repeat command after #1 command, makes it continue to run #1 com
    mand endlessly in 0 millisecond (without interval) until the next command or stop comman
    d comes.
 ...
CMD8 = 8, 0, 2, AA5F, 2, 1, $e22, 3, 3, $d1, 6, 1, $c, 7, 1, $s1
// Length of total data is 8 bytes and 2 bytes from 1st byte are shown as 0xAA, 0x5F.
   1 byte from 2nd byte means F/Z speed value which brings SPEED2 of SPEED section
   and 3 bytes from 3rd byte bring value of DATA1 key of DATA section. 1 byte from 6th byte
   means camera no. and 1 byte from 7th byte is value of checksum used formula CHECK1
   of CHECKSUM section.
...
```

(8) COMMAP section

Key	Description
LEN	Total No. of data (or last No.)
CMD1	Move Tilt up Setting of index value of command section, which are mapping with relevant command.
CMD2	Move Pan right, Tilt up
CMD3	Move Pan right
CMD4	Move Pan right, Tilt down
CMD5	Move Tilt down
CMD6	Move Pan left, Tilt down
CMD7	Move Pan left
CMD8	Move Pan left, Tilt up

CMD9	Activate Auto pan (scan)
CMD10	Activate Focus in
CMD11	Activate Focus out
CMD12	Activate Zoom in
CMD13	Activate Zoom out
CMD14	Stop 1
CMD15	Stop 2
CMD16	Open command
CMD17	Close command
CMD18	Start Preset setting
CMD19	End Preset setting (or Saving)
CMD20	Activate Preset
CMD21	Remove all setting value of Preset
CMD22	Tour Set (tour set is made by all of set value for Preset)
CMD23	Activate Tour
CMD24	Set the starting of Auto Scan
CMD25	Set the ending of Auto Scan
CMD26	(auxiliary) Power 1
CMD27	(auxiliary) Power 2
CMD28	(auxiliary) Power 3
CMD29	(OSD) Camera menu display

Example)

```
[COMMAP]
LEN = 23
CMD1 = 1
CMD2 = 2
CMD3 = 3
...
CMD23 = 21
```

Attention:

Please refer the data sheet to make new protocol files; any of improper operation will make PTZ devices damage and DVR program will crash.

12. Connection Port

12-1. Port and Function table

For remote site connection, program using some port to transmit data.

Port number	Type	Function	
3000	TCP	Image	Changeable(1 st)
3001	TCP	Command/PTZ	Changeable(2 nd)
3003	TCP	Setting	Changeable(3 rd)
8800	UDP	Sound	Changeable(4 th)
4000	UDP	IP Server notify	Fixed
3005	UDP	Event notify	Fixed

If using same level networking, you don't need to care about it.

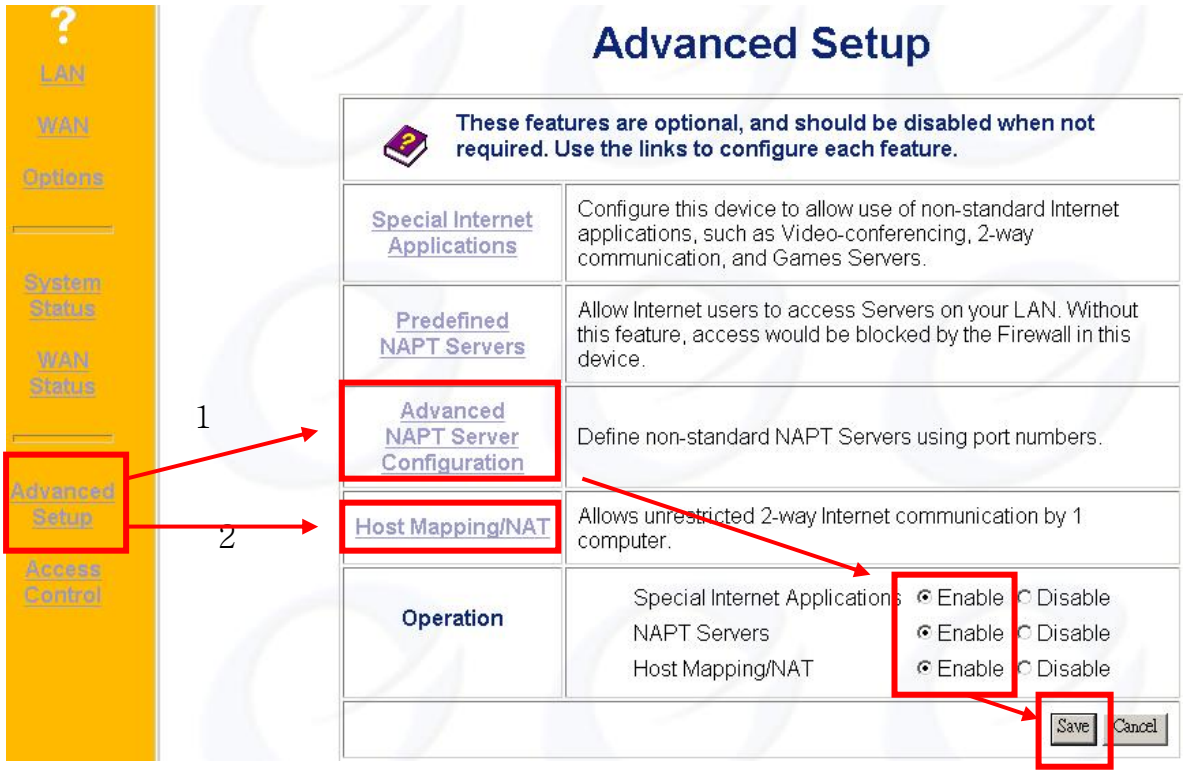
But for the other, like Real-IP and Virtual-IP connection, or PC with firewall, you have to know something about it.

12-2 Remote with Virtual-IP

In case of Remote site with Virtual-IP, you have to find out the IP-mapping at router.

For example, Router device: Speed Stream 2601

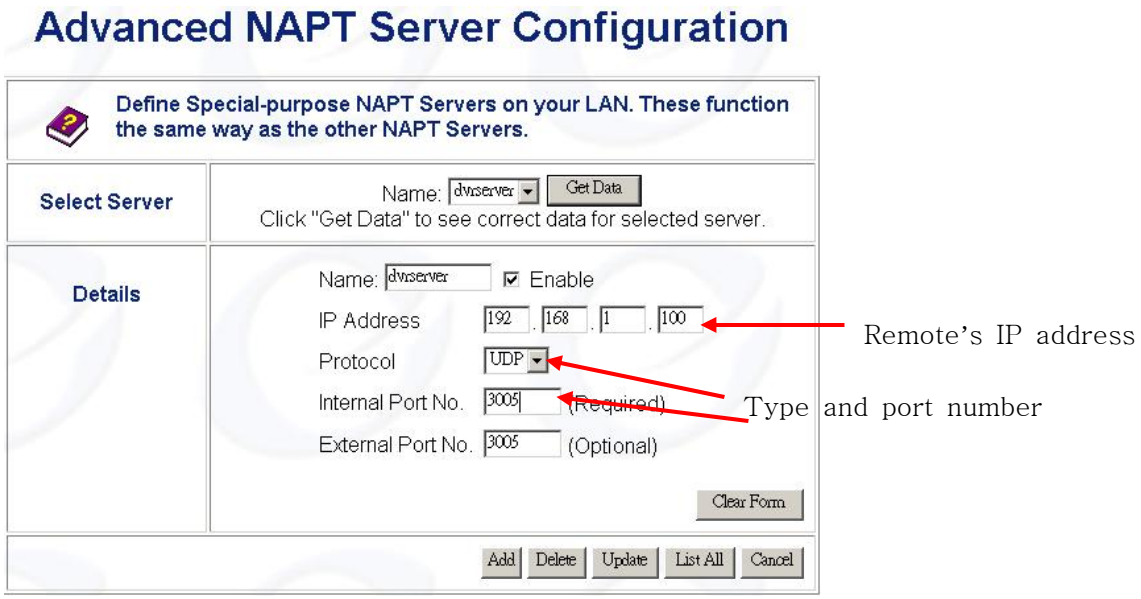
Supported function: NAPT (Network Address Port Translation), Host Mapping


LAN
WAN
Options
System Status
WAN Status
Advanced Setup
Access Control
1
2
Advanced Setup
These features are optional, and should be disabled when not required. Use the links to configure each feature.
Special Internet Applications
Configure this device to allow use of non-standard Internet applications, such as Video-conferencing, 2-way communication, and Games Servers.
Predefined NAPT Servers
Allow Internet users to access Servers on your LAN. Without this feature, access would be blocked by the Firewall in this device.
Advanced NAPT Server Configuration
Define non-standard NAPT Servers using port numbers.
Host Mapping/NAT
Allows unrestricted 2-way Internet communication by 1 computer.
Operation
Special Internet Applications Enable Disable
NAPT Servers Enable Disable
Host Mapping/NAT Enable Disable
Save
Cancel

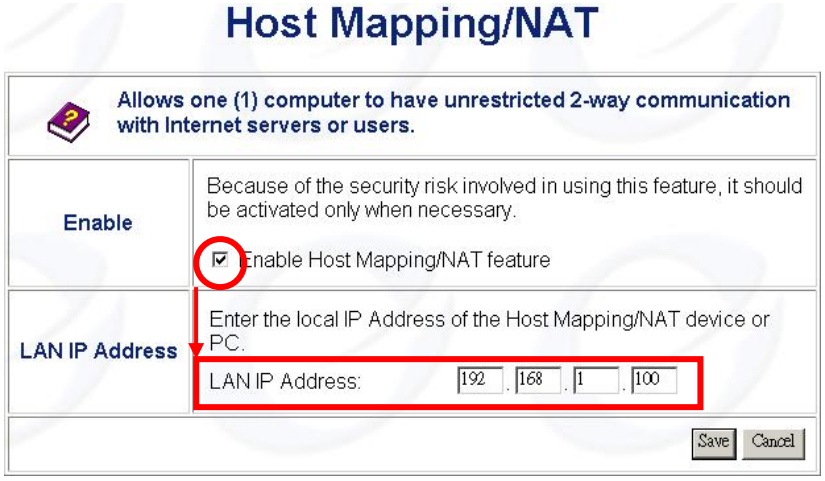
Please refer the router manual for more detail about setting steps.

In this case, there is two ways to do it.

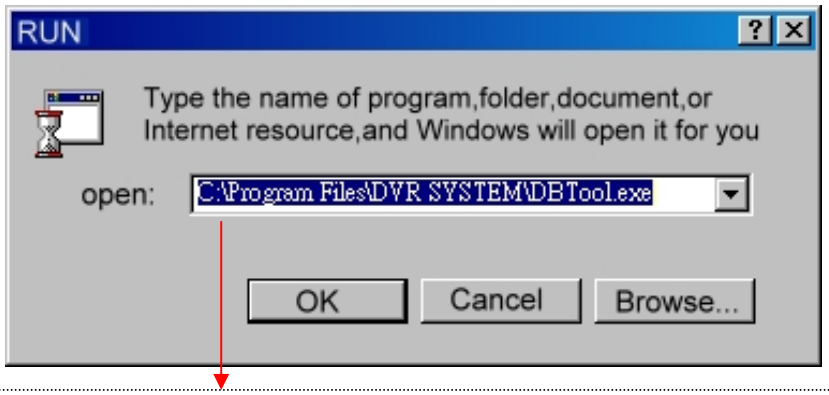
1. Using NAPT, setup the port which you want to use at remote PC.



2. Use Host Mapping, for all of the port to remote PC.

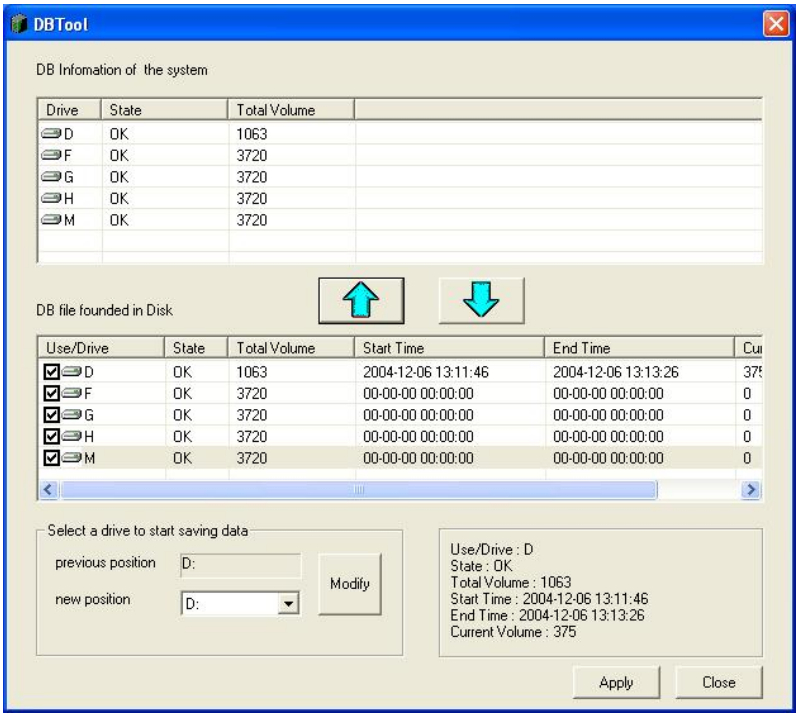

Host Mapping/NAT
Allows one (1) computer to have unrestricted 2-way communication with Internet servers or users.
Enable
Because of the security risk involved in using this feature, it should be activated only when necessary.
Enable Host Mapping/NAT feature
LAN IP Address
Enter the local IP Address of the Host Mapping/NAT device or PC.
LAN IP Address: 192 . 168 . 1 . 100
Save
Cancel

13. How to use DBTool



Program default path is : C:\Program Files\DVR SYSTEM\DBTools.exe

1. This procedure is applied to the program version 4.00.01 or issued later.
2. This utility is requisite when the disk where database had been stored at, is moved to other machine to be stored, and when you are going to search the database there.
3. Right after you transferred the data to other machine, you shall check in order to use the volume data with this “Data Base Tool”.
4. Also, you can search the required data in the drive only as you want by utilizing this “Data Base Tool”.
5. On the way of data searching, when you happen to encounter the same date’s data in different drives, only the data of that drive, nearest to “A”, are to be searched out. For example, if “C” and “D” drive has same date’s data and you try to search by selecting both of “C” and “D” drive, then, search program performs at “C” drive first.


DBTool
DB Infomation of the system
Drive State Total Volume
D OK 1063
F OK 3720
G OK 3720
H OK 3720
M OK 3720
DB file founded in Disk
Use/Drive State Total Volume Start Time End Time
D OK 1063 2004-12-06 13:11:46 2004-12-06 13:13:26
F OK 3720 00-00-00 00:00:00 00-00-00 00:00:00
G OK 3720 00-00-00 00:00:00 00-00-00 00:00:00
H OK 3720 00-00-00 00:00:00 00-00-00 00:00:00
M OK 3720 00-00-00 00:00:00 00-00-00 00:00:00
Select a drive to start saving data
previous position D:
new position D:
Modify
Use/Drive : D
State : OK
Total Volume : 1063
Start Time : 2004-12-06 13:11:46
End Time : 2004-12-06 13:13:26
Current Volume : 375
Apply
Close

- **DB file founded in Disk**
  - Automatically scanning all of drives is system, this Tool indicates the list of the drives contained the volume/database for DVR.
  - Check what drive you are going to make use of.
- **DB Information of the system**
  - Press "↑". And then the drive names checked in "DB file founded in Disk" is added on the DB information list.
  - All of drive names checked in "DB file founded in Disk" shall be shown on this DB information list.
- **Select a drive to start saving (recording) data**
  - Make sure you must choose what drive it starts being stored (recorded) at, first.

- Example–

1. Data Searching after transferring one hard driver to other machine
   (1) Install hard drives.
   (2) Install software of DVR-main.
   (3) Run the setup file, DBTool.exe.
   (4) Check the drives shown in "DB file founded in Disk" or the drives you selected for searching of particular data.
   (5) Press "↑" button in order to add the checked drives to "DB Information of the system".
   (6) Press "Modify" after you select the drive of "Select a drive to start saving data" to be stored (recorded) first.
   (7) Press "Apply" to finish.

   Note: Definitely make sure that the drives checked in "DB file founded in Disk" should be shown in the drive names of "DB Information of the system", too.

2. From now on, you can make use of data search and others, by running "Search " program.
   Note: "DVRDB" is the folder for "volumes", generated by DVR program.

3. By copying just this folder to other machine installed with DVR program, you can use it as another DVR system.

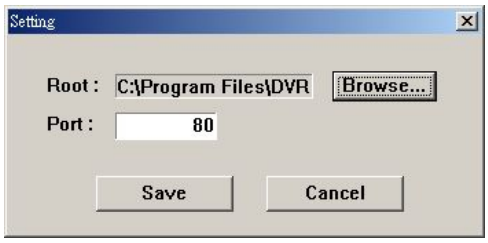
14. Direct Web

14-1 Server

: Once Direct Web program was installed, the tray bar icon like the left side picture, is generated. This program was installed automatically, along with DVR- main program.

Note: When there is any collision against the firewall or port in the server with Direct Web, click the right hand button of the mouse on the tray bar icon and select “setting”. And now change the port.

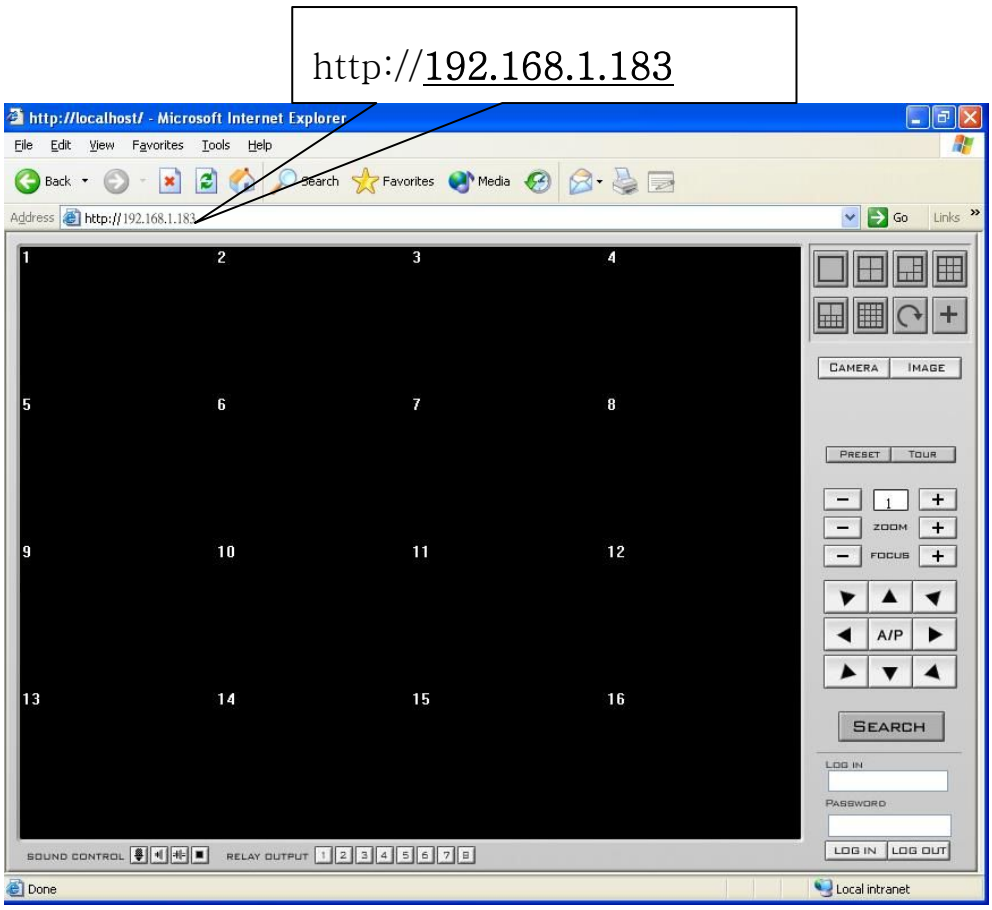
As for root setting, you are recommended to use the defaults setting.



Note:Sometimes the port 80 will be collided,you can change other port number

14 -2 Client

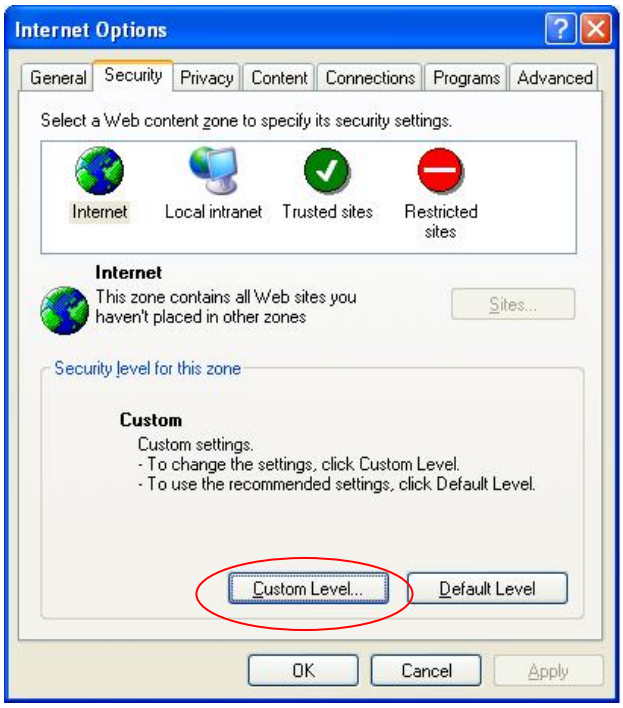
When you input IP address of direct web on “ Address”, the following skin appears.



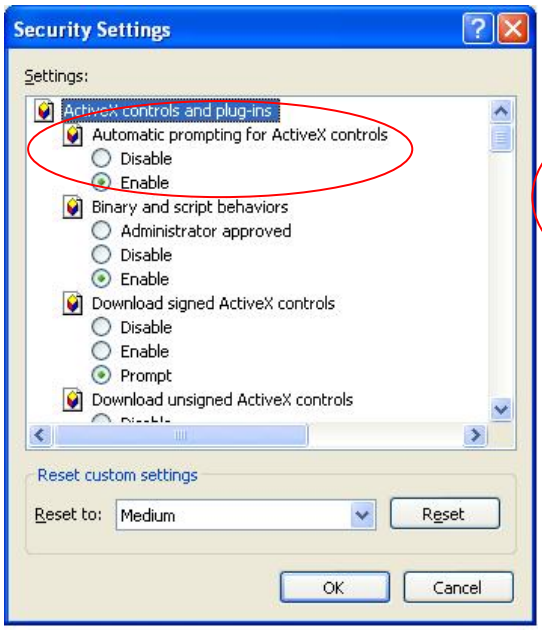
Note:

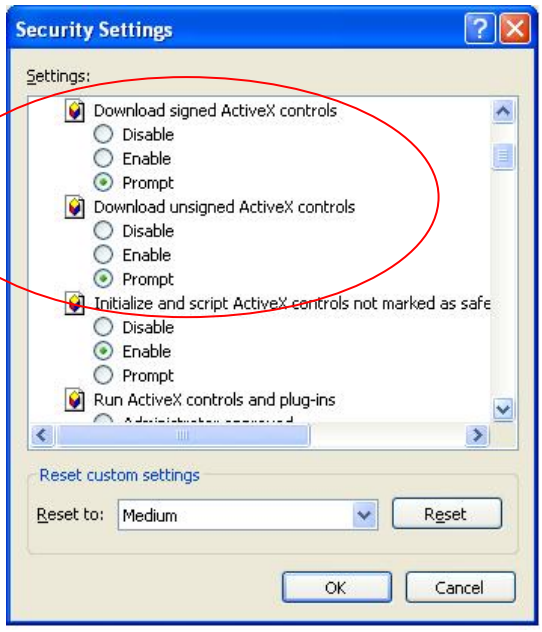
You need to setting IE browser before you connect to DVR.

1. execute IE browser
2. [Tools]→[Internet options..]
3. [Security]



4. Custom Level





a. Automatic prompting for ActiveX controls--→"Enable"

b. Download signed ActiveX controls--→"Enable" or "Prompt"

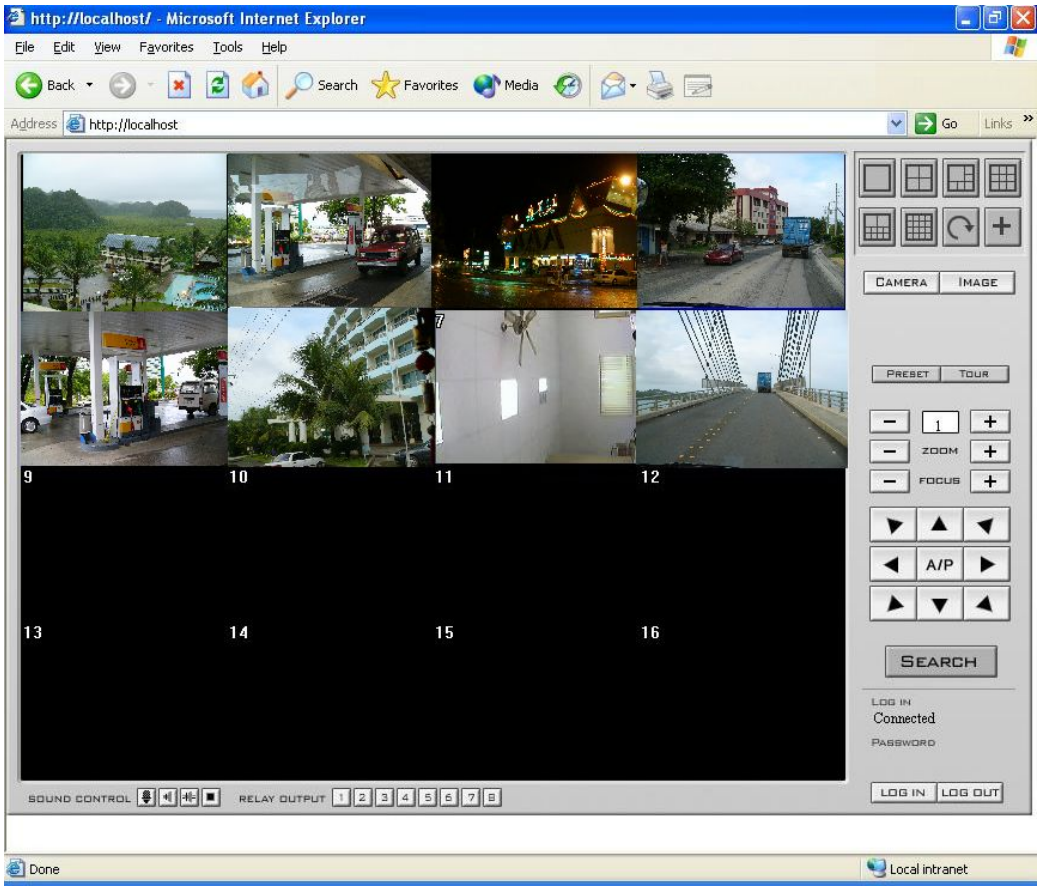
c. Download unsigned ActiveX controls--→"Enable" or "Prompt"

Click “Yes” to install “ActiveView.cab”

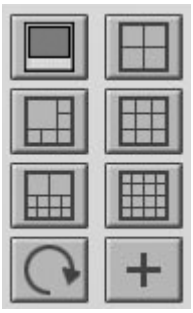
Security Warning
Do you want to install and run "http://localhost/ActiveView.cab"?
The publisher cannot be determined due to the problems below:
The test root has not been enabled as a trusted root.
Yes
No
More Info

After you input the User ID and Password, authorized to access DVR System, click ”LOGIN”. Then, you can be connected

The following picture shows the web view after you connected to the Server having Direct Web.



These buttons are for the use of



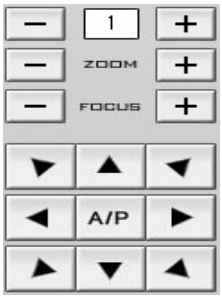
1 channel , 4 channel

6 channel , 9 channel

10 channel , 16 channel

Swap of channel,Screen

PTZ control tabs are for the use of



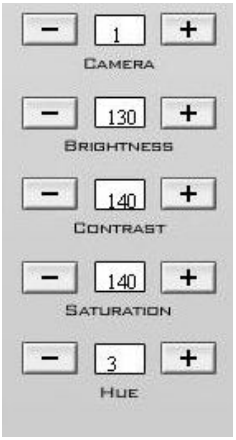
Selection of camera No',

Zoom Out / In

Focus Out / In'

Moving of camera toward the arrow of t

he direction.



Selection of camera No',

Brightness

Contrast

Saturation

Hue

Relay output

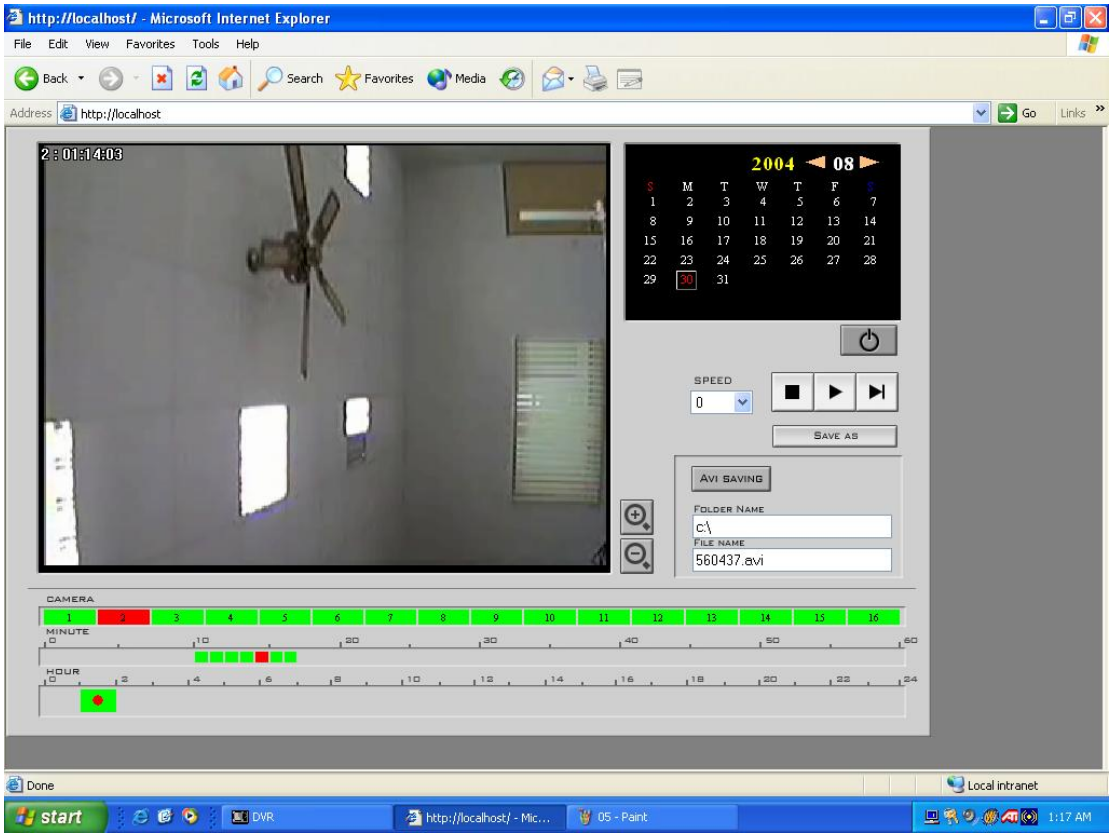
Enable voice communications with DVR. ("Sound Recording" on the DVR User settings menu must be set on)

Send Voice / Receive Voice / Send and receive voice / Stop

SEARCH Search DVR's image data

When use "SEARCH",Browser will install "Angelcalc.cab",click "yes" to installation.

Security Warning
Do you want to install and run "http://localhost/Angelcalc.cab"?
The publisher cannot be determined due to the problems below:
The test root has not been enabled as a trusted root.
Yes
No
More Info



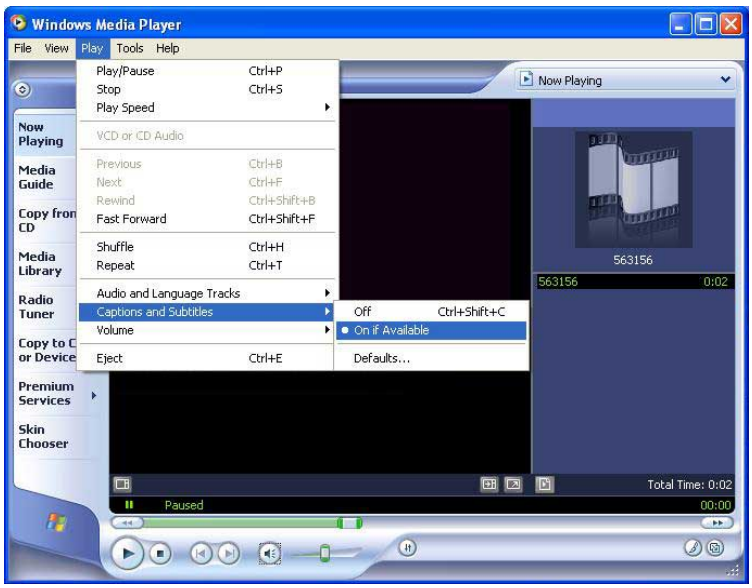
Click “AVI SAVING” and play through video and the video is saved as AVI file. To stop AVI saving click “AVI SAVING” one more time.

Save image as .bmp picture

If you want adjust playing’ speed, you can set values for faster or slower

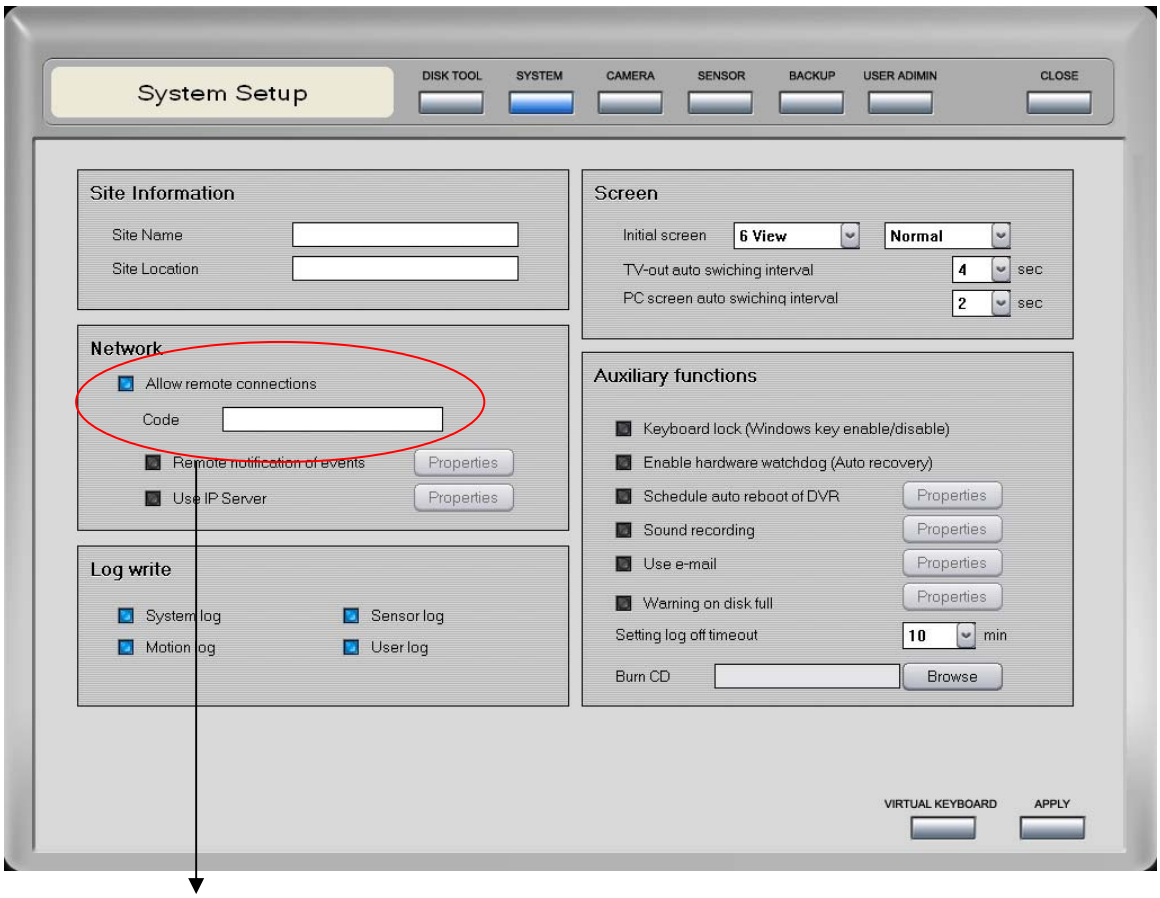
14 –3 Viewing AVI saved file information

AVI files that has been saved in DVR -Net or Direct Web includes information and this information can be viewed in Windows Media Player with Captions On. (example – Windows Media Player 9.0)



15 HOW TO USE REMOTE SOFTWARE

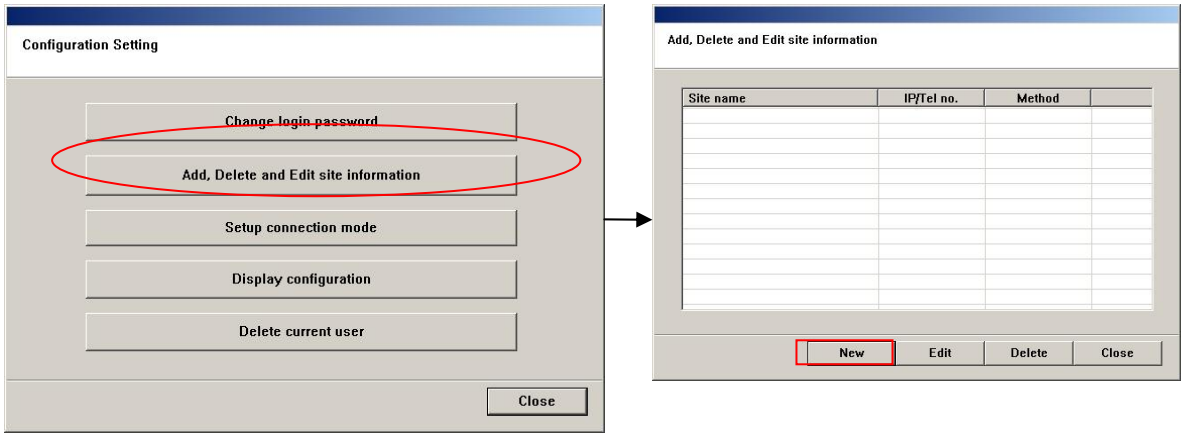
1.DVR SETTING→SYSTEM

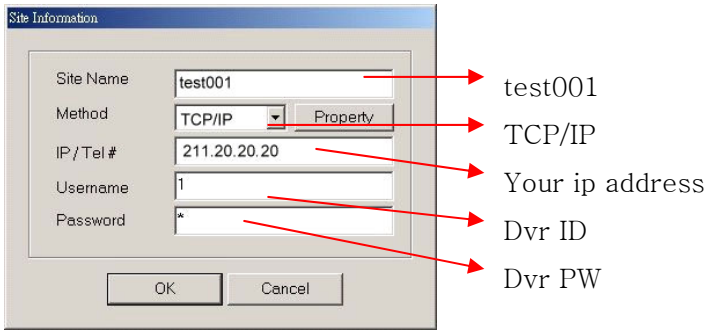


a.Check “Allow remote connection”

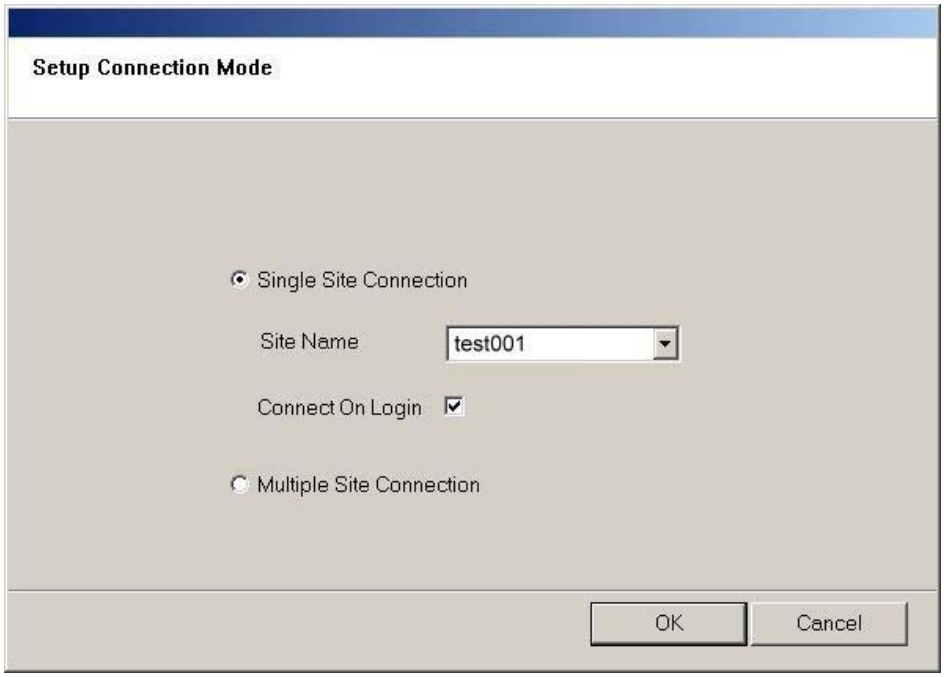
b.input “code” for example: test001

2.DVR-NET

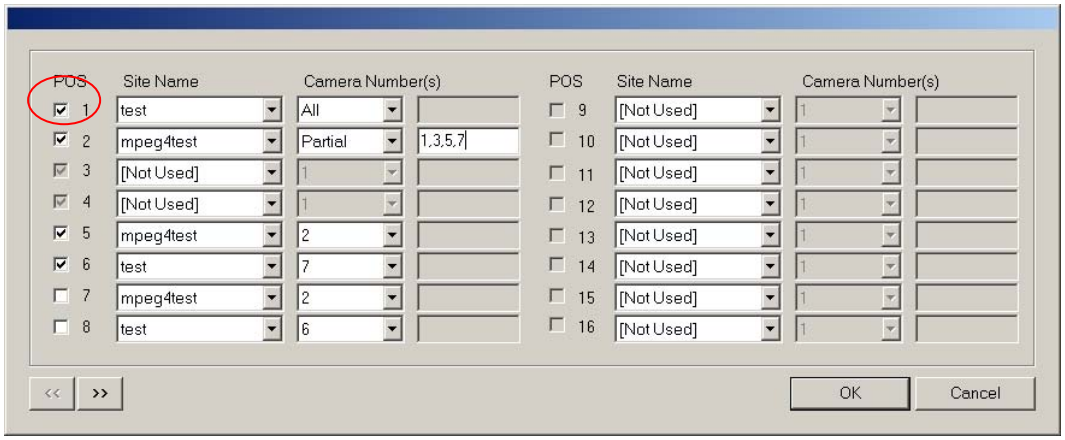




You can select Single or multiple site connection



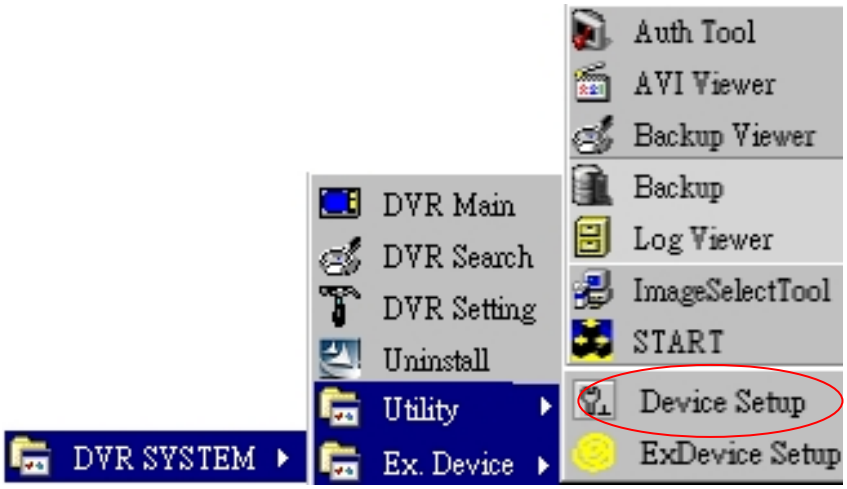
If you select mulitiple site connection,you need to check “POS”



If your computer have firewall,you need open some port for DVR connection,
The table is port setting:

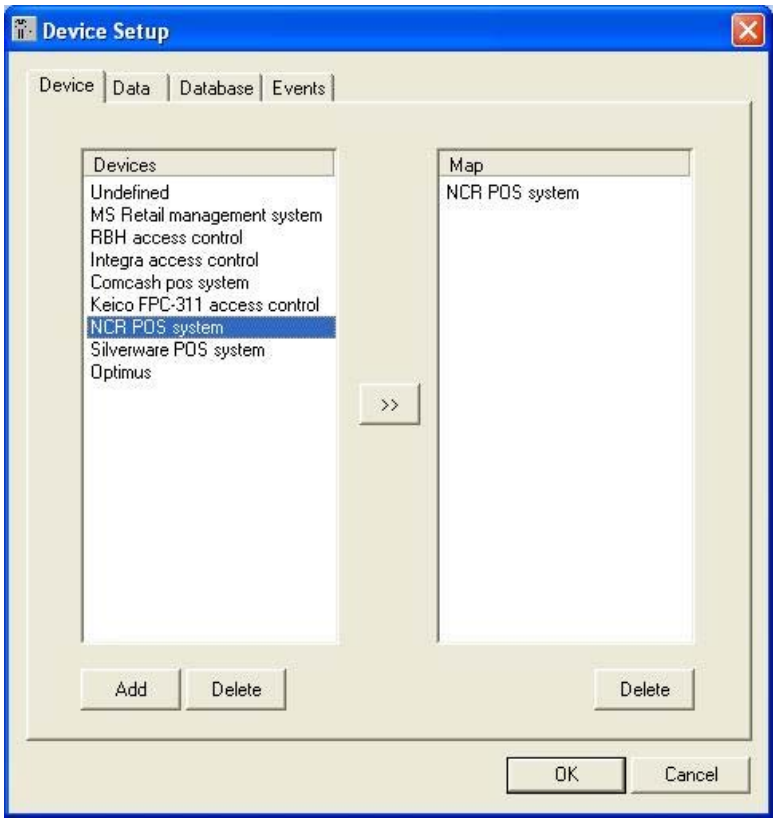
Port number	Type	Function	
3000	TCP	Image	Changeable(1 st)
3001	TCP	Command/PTZ	Changeable(2 nd)
3003	TCP	Setting	Changeable(3 rd)
8800	UDP	Sound	Changeable(4 th)
4000	UDP	IP Server notify	Fixed
3005	UDP	Event notify	Fixed

16. POS, Access Control, External Device Setup



16 - 1. Device Setup

16 - 1 - 1. Select Device



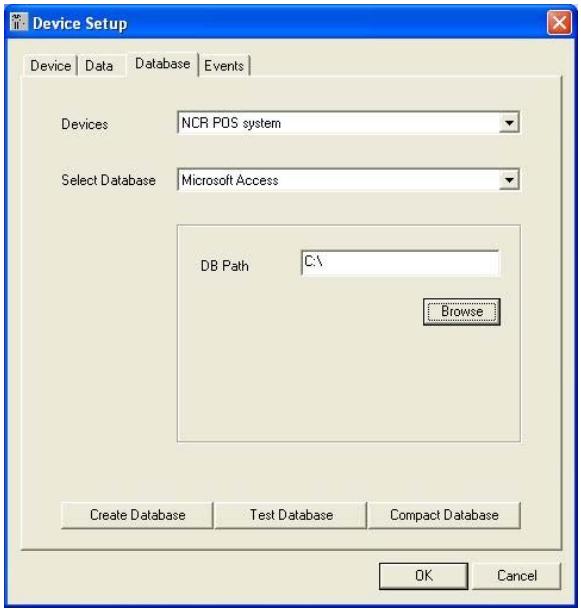
Register POS or Access control device in the Map by pressing **“>>”** button.

*External device can be connected as many as number of cameras.

16 - 1 - 2. Create database

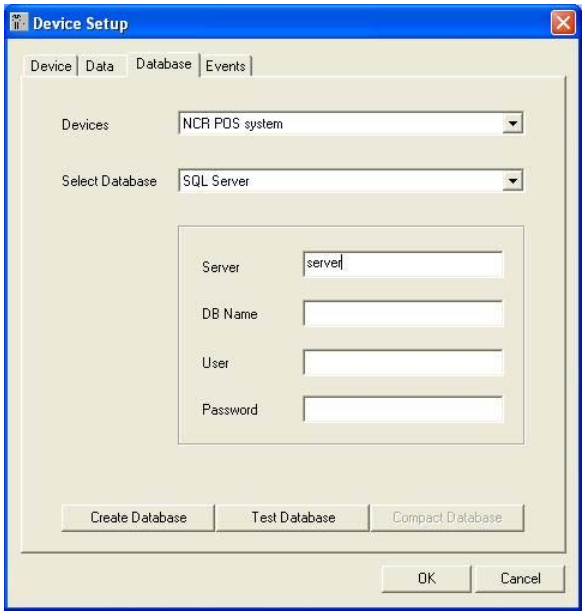
Support type of database : Microsoft Access and SQL server

- Microsoft Access -



Select folder to create DB and click **"Create Database", "Test Database"**, Compact Database in order to create database and test it.

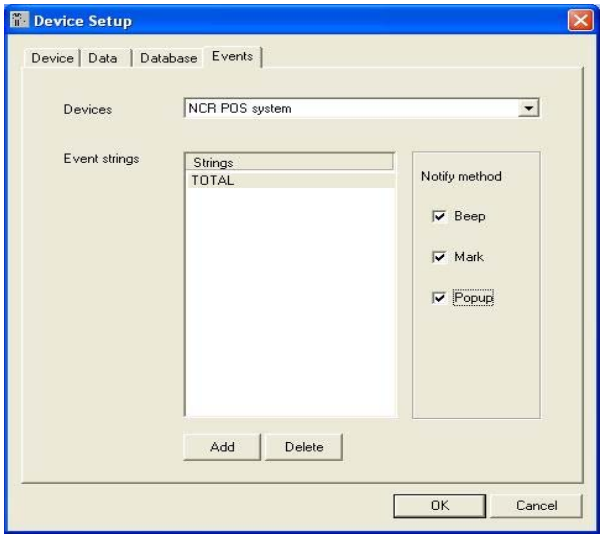
- SQL Server -



Fill out SQL Server name, DB name, User name SQL server and, Password.

Click in order : Create Database -> Test Database -> Compact Database

16 - 1 - 3. Events setting



. After selecting Device click “Add” button to add event string.(case sensitive.)

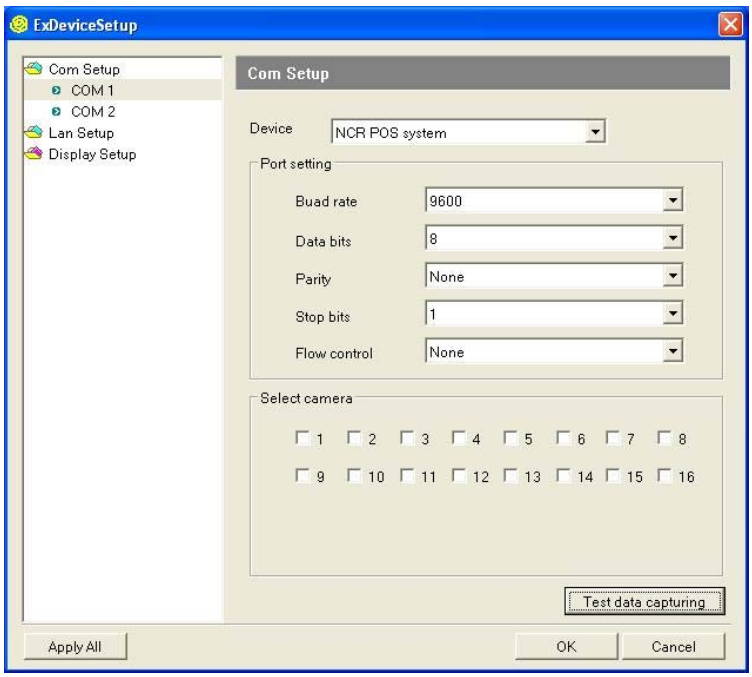
. Select each registered even string and choose Notify method (Beep, Mark, Popup).

16 - 2. ExDevice Setup

External device connects to DVR through both Serial port and TCP/IP.

Port Converter allows RS-422/485 and parallel connection.

16 - 2 - 1. Com Setup



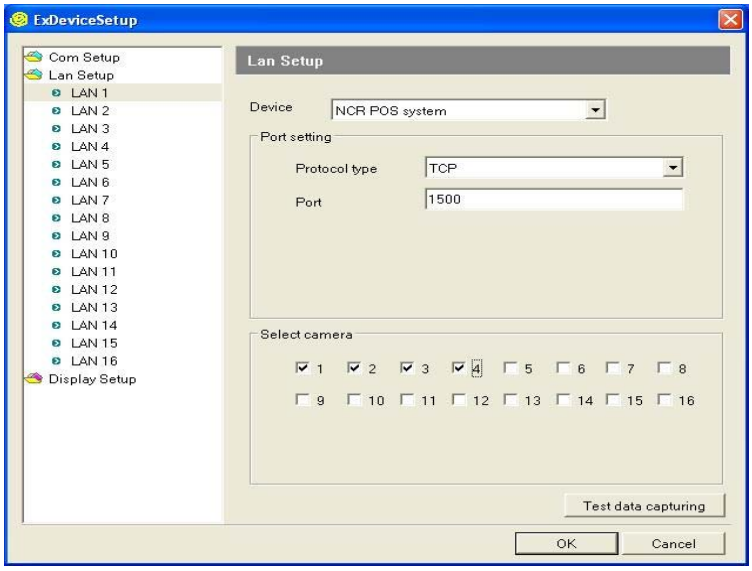
Available ports are listed in the left side.

* If there are more External devices than available ports, extra COM port card

- Select the port where external device is connected.
- Select Device.
- Change the port setting to match up external device.
- After setting, test the connectivity of external device by “Test data Capturing”.

* if noting comes up in Test data capturing, correct the setting value and cable connection.

16 - 2 - 2. Lan Setup



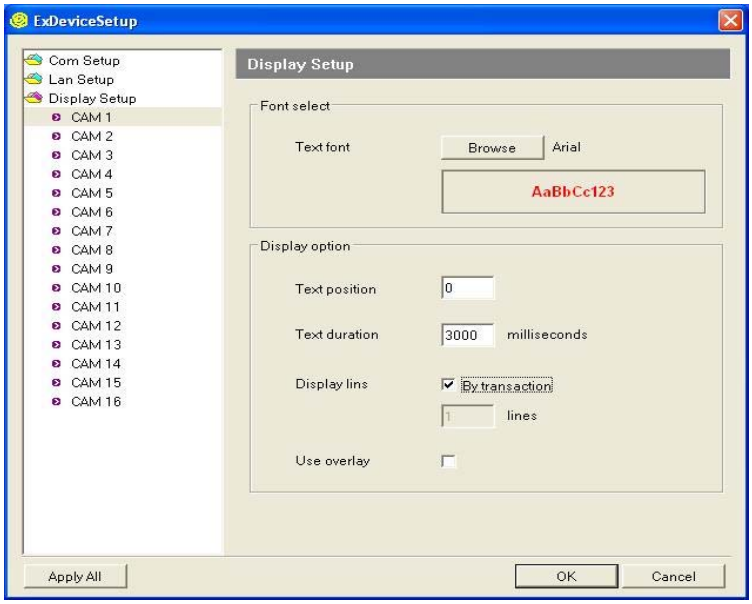
* Multiple external devices can be connected with single TCP/IP connection.

Each device must be given a unique port number.

- Choose Lan from list.
- Select Device.
- Change port setting to match up the device.(support TCP or UDP)
- Choose a camera(s) to display data from external device.
- After setting, test the connectivity of external device by “Test data Capturing”.

* if noting comes up in Test data capturing, correct the port setting and cable connection.

16 - 2 - 3. Display Setup

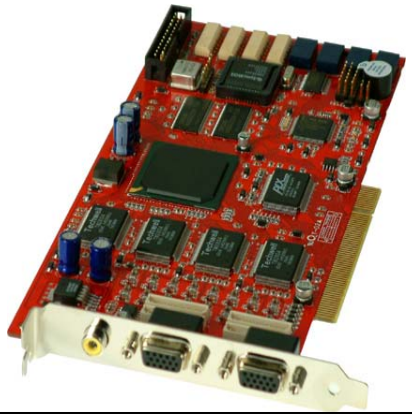


Setup the property of display of text data.

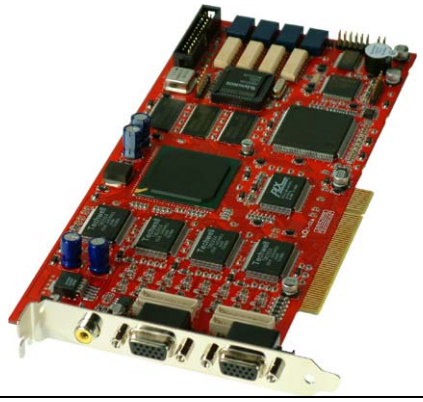
- Choose camera number.
- **Font select**: Click Browse and change font, size and color.
- **Text position**: Setup the position of text. Default is set to top of the screen. As number increases, text will be displayed farther from the top.
- **Text duration**: Set time for text to stay on screen.
- **Display lines**: By transaction – Keep display text regardless number of lines until transaction data has received.
  lines – Set the desired line to displayed text.
- **Use overlay**: When checked, camera image and data from external device is compound together.(depends on external device, main display in device can be compound as well). When unchecked, they are not compound together. However, It is still possible to verify the data and image together in the Search and remote access.

Hardware Components

16 channel
Display speed : 480 frame
Recording speed : 120 frame



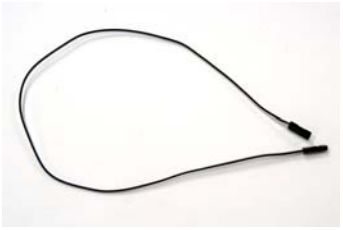
16 channel
Display speed : 480 frame
Recording speed : 240 frame



Accessories

Pigtail Cable

Sensor Port



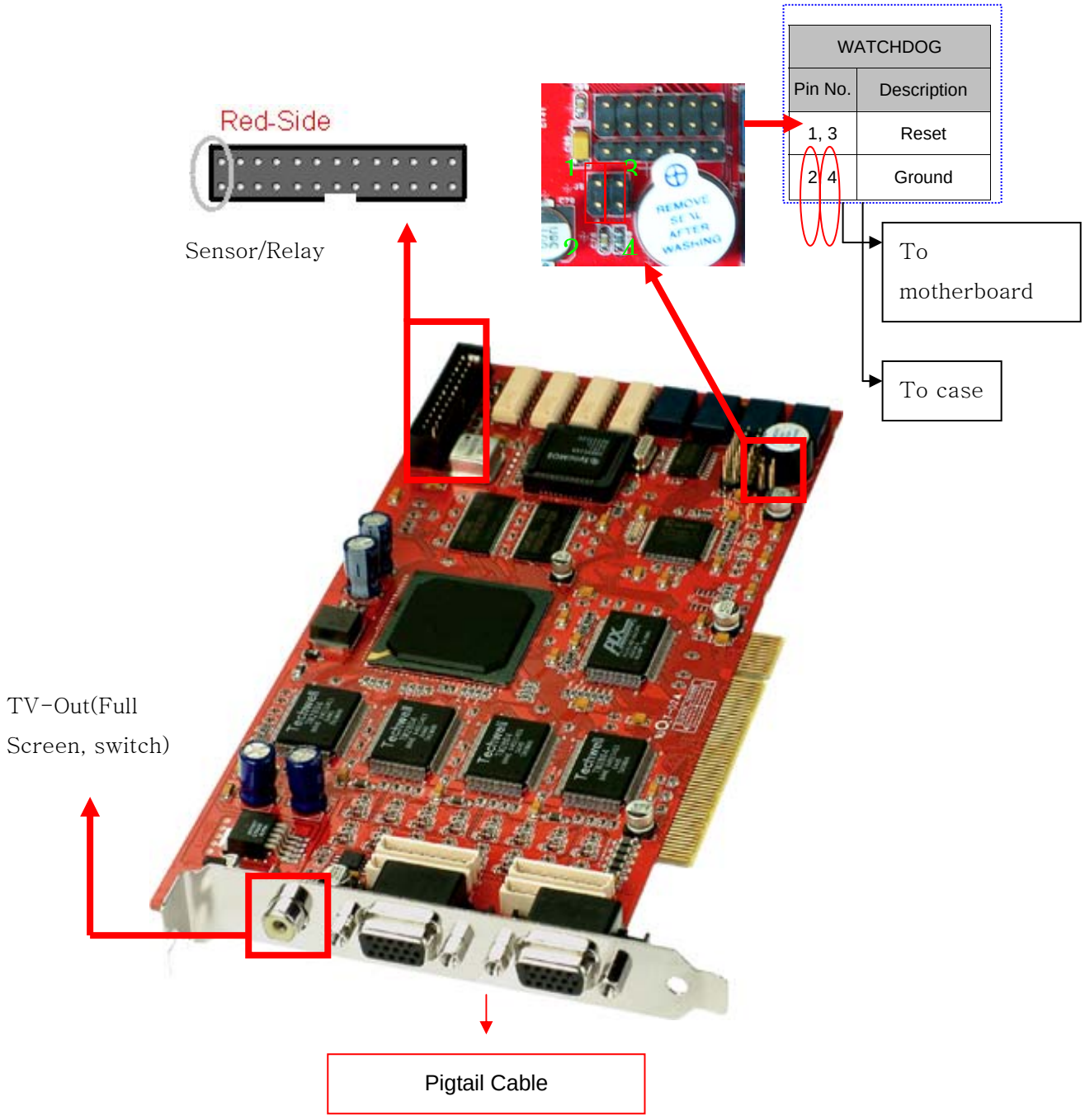
Reset Cable (Watchdog)

Audio Cable

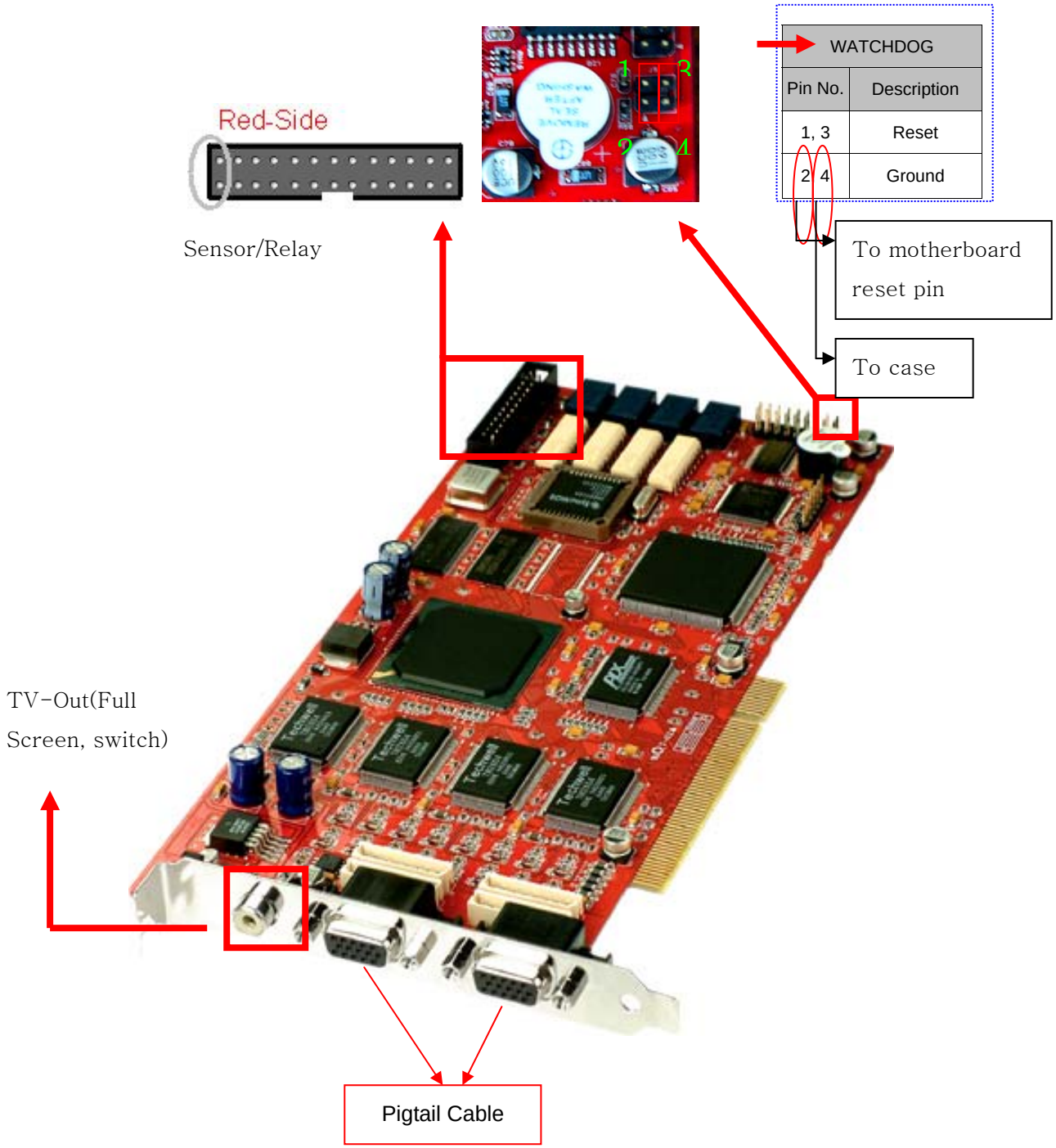
Sensor Cable

Capture Card Layout

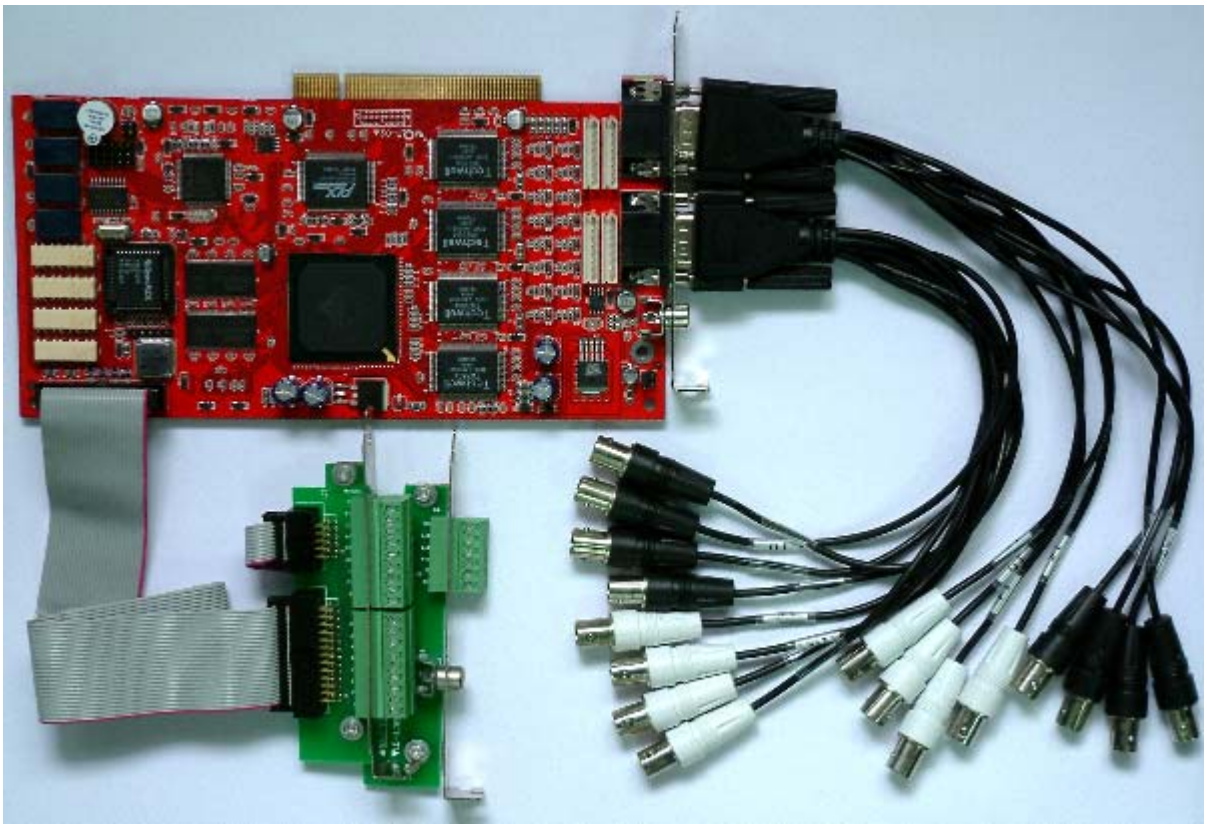
16 ch 120 frame capture board



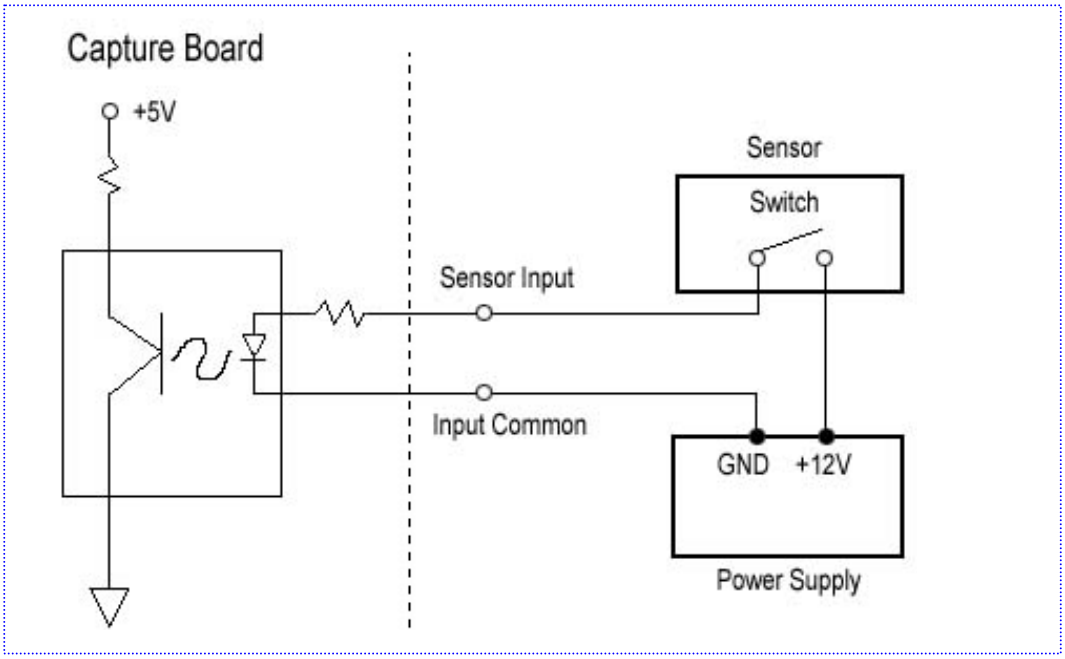
16 ch 240 frame capture board

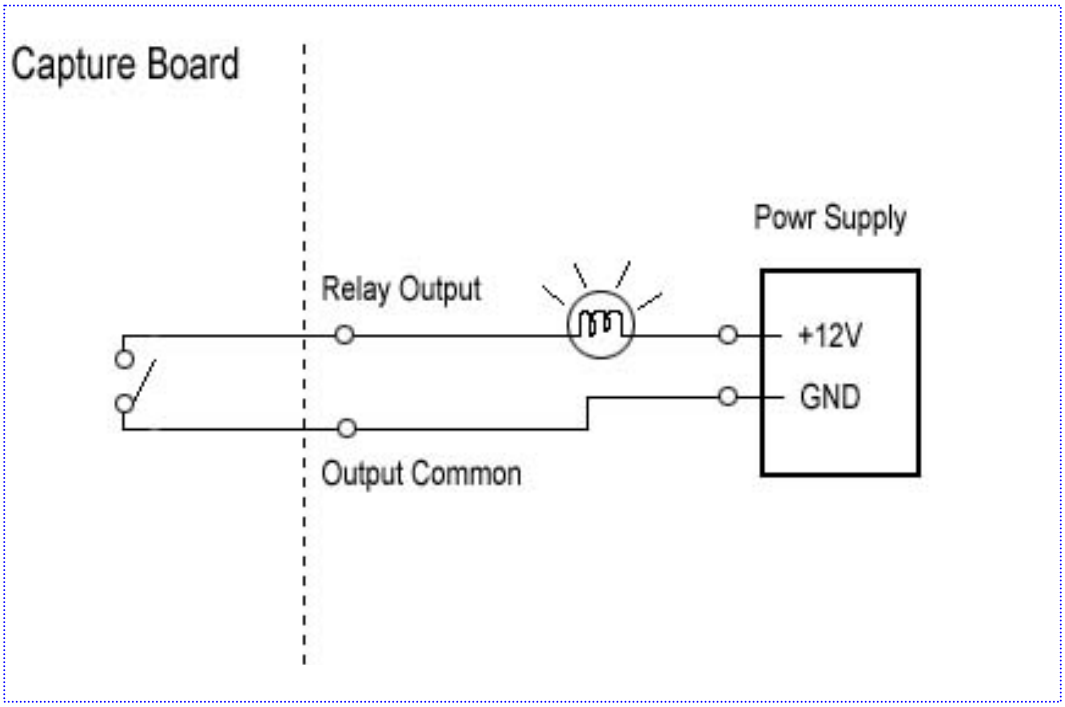


Connection

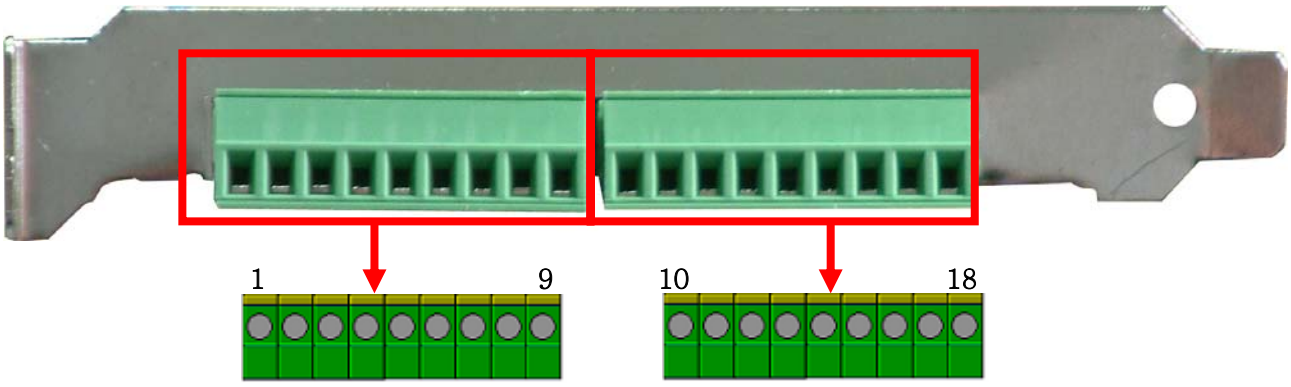


Sensor Input and Sensor Output

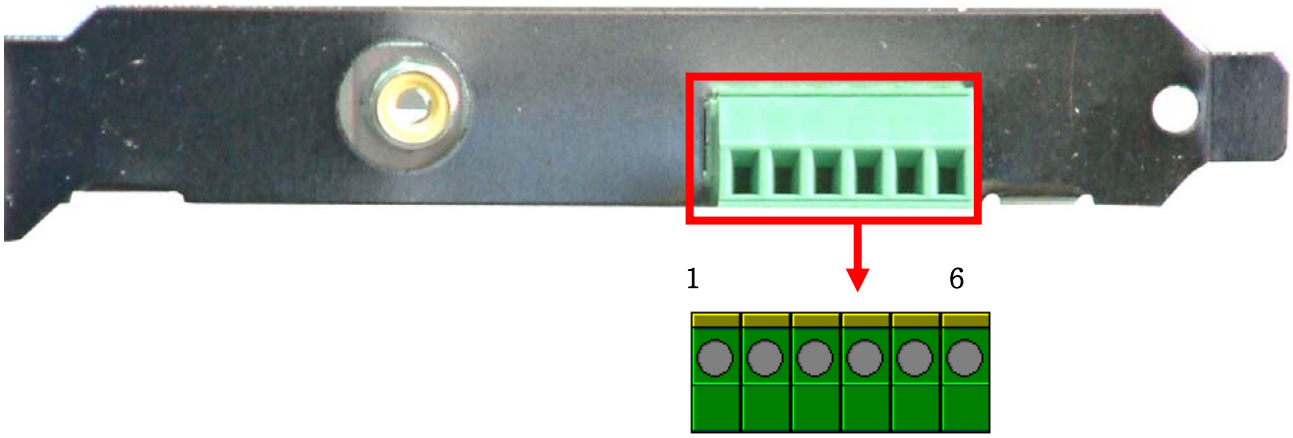




I/O Board



PIN NO.	Description
1~9	Sensor input 1 ~ 8
9	Input Ground
10~17	Sensor input 9~16
18	Input Ground



PIN NO.	Description
1,2	Output Ground
3	Relay output 4
4	Relay output 3
5	Relay output 2
6	Relay output 1

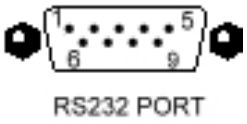
Relay connection note Contact Ratings: 30VDC 1A, 125VAC 1A

POS connection

COM PORT

TD→pin 2

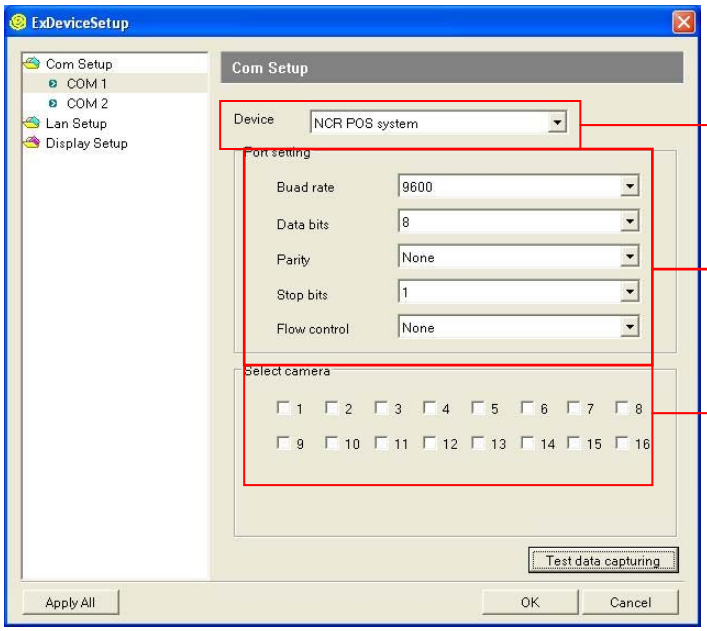
RD→pin 3



RS232 PORT

Pin 2	RD
Pin 3	TD

Connect to DVR COM1 or COM2

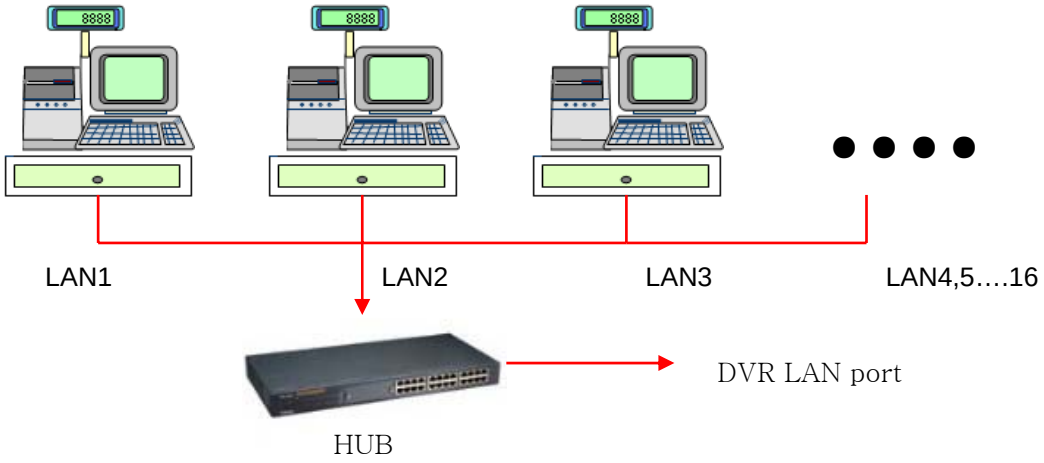


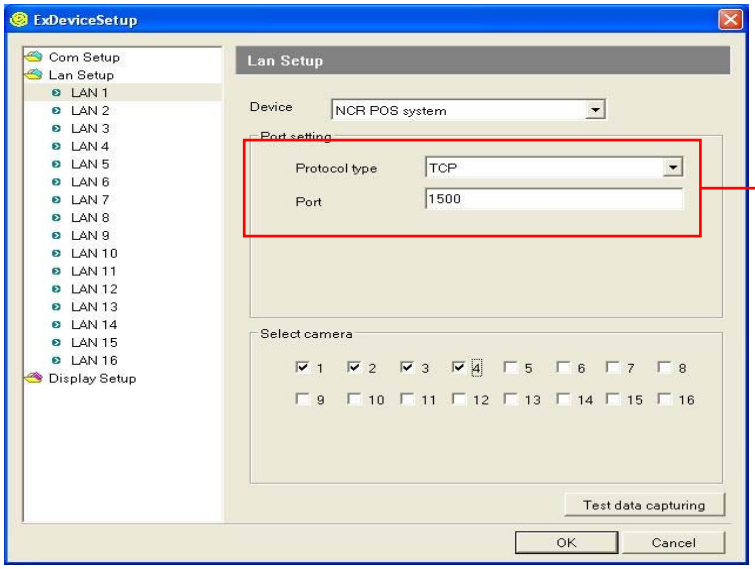
Select POS system protocol

Change the port setting to match up POS external device.

Select Connected camera

POS LAN





Change port setting to match up the device.(support TCP or UDP)

Please refer to User_manual chapter 16 for detailed setup

PDA-NET installation

a. Connect PDA device to computer(with cable or infrared)

b. If use infrared connect to PDA, you need install “PDA_MSASYNC.EXE” to your computer first. (you can find this program in our CD)

c. Install “PDA-Net.exe” from our CD

d. Finish install, then check your PDA→ program, you can find PDA-NET

e. input DVR’s IP Address, user name and password, then login

PDA-NET only support Microsoft Pocket PC(windows CE)